PB-229 851

CONFERENCE IN THE MATTER OF POLLUTION OF THE INTERSTATE AND MASSACHUSETTS INTRASTATE WATERS OF THE MERRIMACK AND NASHUA RIVERS, HELD IN BOSTON, MASSACHUSETTS, FEBRUARY 11, 1964

Public Health Service
Washington, D. C.

11 February 1964

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In the Matter of

Pollution of the Interstate

and

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of the

MERRIMACK AND NASHUA RIVERS

Boston, Massachusetts

February 11, 1964

U.S. Department of Health, Education, and Welfare

Washington 25, D.C.

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CONFERENCE

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U.S. Department of Health, Education, and Welfare

Washington 25, D.C.

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Conference in the Matter of Pollution of the Interstate and Massachusetts Intrastate Waters of the Merrimack and Nashua Rivers and their Tributaries (Massachusetts-New Hampshire), convened at 9:30 a.m., Tuesday, February 11, 1964, at Faneuil Hall, Boston, Massachusetts.

PRESIDING:

Mr. Murray Stein, Chief, Enforcement Branch, Water Supply and Pollution Control, Public Health Service, Department of Health, Education, and Welfare, Washington 25, D. C.

CONFEREES:

Worthen H. Taylor, Director and Chief Engineer, Division of Sanitary Engineering, Massachusetts Department of Public Health

John Palazzi, Chairman, New Hampshire Water Pollution Commission

William A. Healy, Technical Secretary, New Hampshire Water Pollution Commission

Thomas A. LaCava, Chief Water Pollution Engineer, New Hampshire Water Pollution Commission

Alexander J. Kalinski, Assistant Attorney General, Legal Counsel for the New Hampshire Water Pollution Commission

CONFEREES (Continued):

Joseph C. Knox, Executive Secretary, New England Interstate Water Pollution Control Commission

Herbert H. Rogers, Program Director, Water Supply and Pollution Control, Region I, Public Health Service, Department of Health, Education, and Welfare, Boston, Massachusetts

PARTICIPANTS:

Hon. Torbert H. MacDonald, United States Representative from the State of Massachusetts

Herbert R. Pahren, Senior Sanitary Engineer, Region I, Water Supply and Pollution Control, Public Health Service, Department of Health, Education, and Welfare

Mark Abelson, Regional Coordinator, United States Department of the Interior, Boston, Massachusetts

John S. Gottschalk, Regional Director, United States Bureau of Sport Fisheries and Wildlife, Boston, Massachusetts

PARTICIPANTS (Continued):

Charles E. Knox, District Engineer, Water Resources Division, United States Geological Service

Archie E. Kenefick, State Representative, Lowell, Massachusetts

James P. Rurak, State Senator, Merrimack River Pollution Commission, Haverhill, Massachusetts

Maurice E. Bilodeau, Base Civil Engineer, Grenier Field, Manchester, New Hampshire

John F. Carney, City Councilor, Lowell, Massachusetts

Hon. Mario J. Vagge, Mayor, City of Nashua, New Hampshire

Hon. William X. Wall, State Senator, Boston, Massachusetts

Hon. Albert H. Zabriskie, State Representative, Newburyport, Massachusetts

Cornelius T. Finnegan, Jr., City Solicitor and State Representative, Lowell, Massachusetts

Mrs. Bernard H. Flood, Member of Board of Directors, League of Women Voters of Massachusetts

Mrs. William H. Drury, Su-As-Co River Basin Group, League of Women Voters of Massachusetts

PARTICIPANTS (Continued):

Donald M. Crocker, Chairman, Nashua River Committee of the National Council for Stream Improvement

Walter B. French, General Manager, Jackson Properties, Inc., Lowell, Massachusetts

Hon. George H. Lawler, Jr., Mayor, City of Newburyport, Massachusetts

Eugene F. Crane, Treasurer and General Manager, Southwell Combing Company, North Chelmsford, Massachusetts

Andrew J. Gillis, Former Mayor of the City of Newburyport, Massachusetts

Raymond J. Greenwood, Selectman, Town of Chelmsford, Massachusetts

Charles H. W. Foster, Commissioner, Massachusetts Department of Natural Resources

Thomas F. Markham, Field Coordinator, United States Department of Commerce, Area Redevelopment Administration

OTHERS IN ATTENDANCE:

W. L. Hyland, Vice President, Fay, Spofford and Thorndike, 11 Beacon Street, Boston, Massachusetts

Ralph W. Horne, Engineer, Fay, Spofford and Thorndike, 11 Beacon Street, Boston, Massachusetts

John K. Beeten, Investment Banker, White Weld, High Street, Boston, Massachusetts

F. M. Cahaly, Vice President, Fay, Spofford and Thorndike, 11 Beacon Street, Boston, Massachusetts

William M. G. Fletcher, Manager Municipal Research Department, White Weld & Company, 20 Broad Street, New York 5, New York

H. J. Hosking, Vice President, Groton Leatherboard Company, West Groton, Massachusetts

Herbert L. O'Neil, Vice President and General Superintendent, Falulah Paper Company, Falulah Road, Fitchburg, Massachusetts

Albert V. Gilet, President, Gilet Wool Scouring Company, Princeton Street, North Chelmsford, Massachusetts

C. J. Carney, Assistant to the Manager, Improvements, Allied Chemical Corporation, P.O. Box 1069, Buffalo, New York

OTHERS IN ATTENDANCE (Continued):

Allan J. Morgenroth, Sanitary Engineer, Morgenroth & Associates, Inc., 294 Washington Street, Boston, Massachusetts

Donald H. Thomas, Sales, Allied Chemical Corporation, 150 Causeway Street, Boston, Massachusetts

Joseph F. Theriault, Chemist, Continental Can Company, Inc., Bradford, Massachusetts

E. J. Ferrell, Technical Director, Weyerhaeuser Company Paper Division, Westminster Street, Fitchburg, Massachusetts

Harry S. Mosebrook, Public Affairs, Eastern Region, Weyerhaeuser Company, 230 Park Avenue, New York, New York

Peter D. Hughes, Sanitary Engineer, Weyerhaeuser Company Paper Division, Fitchburg, Massachusetts

John S. Bethel, Jr., Partner, Metcalf & Eddy, Statler Office Building, Boston, Massachusetts

Charles A. Knapp, Senior Associate, Metcalf & Eddy, Statler Building, Boston, Massachusetts

OTHERS IN ATTENDANCE (Continued):

Harold D. Kilgore, Sanitary Engineer, Whitman & Howard, Inc., 89 Broad Street, Boston, Massachusetts

D. D. Uong, Senior Vice President, Fitchburg Paper Company, 601 River Street, Fitchburg, Massachusetts

Kristian Jensen, Jr., Vice President, Jensen's, Inc., Southington & West Hollis Street

Eugene E. Gilet, Management Trainee, Gilet Wool Scouring Corporation, Princeton Street, North Chelmsford, Massachusetts

Paul Flannery, Camp, Dresser & McKee, 18 Tremont, Boston, Massachusetts

Paul W. Prendiville, Engineer, Camp, Dresser & McKee, 18 Tremont Street, Boston, Massachusetts

Joseph C. Lawler, Partner, Camp, Dresser & McKee, 18 Tremont Street, Boston, Massachusetts

Prescott C. Fuller, President, Prescott Fuller & Company, 355 Lexington Avenue, New York, New York

Edgar A. Gilet, Treasurer, Gilet Wool Scouring Corporation, Princeton Street, North Chelmsford, Massachusetts

OTHERS IN ATTENDANCE (Continued):

Gordon L. Benson, St. Regis Paper Company, Mill Manager, Main Street, East Pepperell, Massachusetts

John Radley, Chief Chemist, Falulah Paper Company, Fitchburg, Massachusetts

Edward M. Nordengren, Haverhill City Council and City Manager, 22 Lexington Avenue, Haverhill, Massachusetts

William E. Hays, Senator - 5th District, 455 Lexington Street, Waltham, Massachusetts

Sherwood J. Tarlow, Coordinator, Governor's Office, Boston, Massachusetts

Charles Egerton, Selectman, 192 Groton Road, Chelmsford, Massachusetts

Paul F. Newman, Selectman, Town of Billerica, 761 Boston RC, Billerica, Massachusetts

Howard E. Humphrey, Selectman, 208 Westford Street, Chelmsford, Massachusetts

Joel B. Hill, City Engineer, City Hall, Nashua, New Hampshire

J. L. Rodgers, Vice President, Salisbury Water Supply Company, c/o New England Water Service Corporation, 311 Washington Street, Islington, Massachusetts

OTHERS IN ATTENDANCE (Continued):

Raymond Broadhead, Selectman, North Andover, Massachusetts

Vernon R. Fletcher, Representative, 11th Middlesex District, Chelmsford Town Counsel, 34 Chelmsford Street, Chelmsford, Massachusetts

Edward H. Bowley, Jr., Tewksbury Planning Board, Tewksbury, Massachusetts

Robert C. McAnespie, Merrimack River Pollution Commission, 6 Middle Street, Dracut, Massachusetts

A. W. Albert, Director, Water Pollution, State of Vermont, State Office Building, Montpelier, Vermont

George McDonough, City Engineer, Lowell, Massachusetts

James F. Bowdren, Commissioner, New England Interstate Water Pollution Control Commission, 40 Prospect Street, West Newbury, Massachusetts

Walter G. White, Chairman, New Hampshire Water Resources, Concord, New Hampshire

Armand E. Provost, Jr., Public Works Administrator, Public Works Department, Billerica, Massachusetts

OTHERS IN ATTENDANCE (Continued):

M. M. Varma, Assistant Professor, Tufts University, Medford, Massachusetts

N. Bruce Hanes, Assistant Professor, Civil Engineering Department, Tufts University, Medford, Massachusetts

Linfield Brown, Tufts University, 920 Miller Hall, Medford, Massachusetts

W. J. Ferreira, Commissioner, New England Interstate Water Pollution Control Commission, 140 Mary Street, Arlington, Massachusetts

Fred C. Basile, Commission Member, 303 Kenozz Avenue, Haverhill, Massachusetts

William B. Duffy, Superintendent, Public Works, 120 Main Street, North Andover, Massachusetts

Arthur P. Chesmore, Assistant Fish & Game Biologist, Massachusetts Division of Marine Fisheries, 6 Christopher Street, Newburyport, Massachusetts

William C. Jerome, Assistant Fish & Game Biologist, Massachusetts Division of Marine Fisheries, 15 Cottage Road, Newbury, Massachusetts

OTHERS IN ATTENDANCE (Continued):

Frank Grice, Marine Biologist, Massachusetts Division of Marine Fisheries, Shellfish Treatment Plant, Newburyport, Massachusetts

Erwin S. Wilder, Pollution Chairman, State Council Sportsmen's Clubs, 319 Sunwood Street, West Lynn, Massachusetts

John J. Cooney, Tewksbury Planning Board, 1094 Anderson Street, Tewksbury, Massachusetts

Joseph L. McLaughlin, Merrimack River Pollution Board, Agent, Board of Health, City Hall, Newburyport, Massachusetts

Mrs. Robert A. Lewis, Jr., Newburyport League of Women Voters, 9 Fairview Avenue, Newbury, Massachusetts

Mrs. P. C. Reardon, League of Women Voters, 28 Avon Way, Quincy, Massachusetts

Mrs. E. Newcomb Mills, Conservation Commissioner, 12 Westford Street, Chelmsford, Massachusetts

Ingemarie Richardson, League of Women Voters, Lincoln Road, Lincoln, Massachusetts

Mrs. G. M. Dusinberre, League of Women Voters, 77 Liberty Street, Manchester, New Hampshire

OTHERS IN ATTENDANCE (Continued):

Mrs. Edward Fleisher, President, Manchester League of Women Voters, Manchester, New Hampshire

Mrs. David L. Bobroff, Chairman, Suasco River Basin Group, League of Women Voters, 114 Morse Road, Sudbury, Massachusetts

Roger P. Rondeau, Senior Sanitary Engineer, Massachusetts Department of Public Health, State House, Boston, Massachusetts

Allen N. Cooperman, Assistant Sanitary Engineer, Massachusetts Department of Public Health, State House, Boston, Massachusetts

Peter J. Sahlis, Director of Public Health, Chelmsford Board of Health, Town Hall, Chelmsford, Massachusetts

Richard M. Power, Sanitary Engineer, Massachusetts Department of Public Health, Room 511, State House, Boston, Massachusetts

Richard E. Greeley, Massachusetts Department of Public Health, Room 511, State House, Boston, Massachusetts

Myrl E. Wilson, Captain, USAF, MSC Sanitary & Ind. Hyg. Eng., Air Force Systems Command, 3245th USAF Dispensary, L. G. Hanscom Field, Bedford, Massachusetts

OTHERS IN ATTENDANCE (Continued):

F. H. Pauszek, District Chemist, U. S. Geological Survey, P. O. Box 948, Federal Building, Albany, New York.

E. L. Hill, Chief, Planning & Reports Branch, Corps of Engineers, Waltham, Massachusetts

Joseph L. Ignazio, Chief, Small Projects Section, U. S. Army Engineers, 424 Trapelo Road, Waltham, Massachusetts

Carl F. Nelson, Jr., U. S. Fish & Wildlife Service, 3 Pleasant Street, Concord, New Hampshire

Earle S. King, District Sanitary Engineer, D. P. W. O I B, 295 Summer Street, Boston, Massachusetts

Robert H. Reeves, Senior Assistant Sanitary Engineer, U. S. Public Health Service, 120 Boylston Street, Boston, Massachusetts

Arthur M. Menard, Regional Attorney, DHEW, Region I, 120 Boylston Street, Boston, Massachusetts

Hayse H. Black, Industrial Wastes Consultant, U.S.P.H.S. - RASEC, 4676 Columbia Parkway, Cincinnati, Ohio

John W. Fullenwider, Assistant Sanitary Engineer, U.S.P.H.S., 120 Boylston Street, Boston, Massachusetts

OTHERS IN ATTENDANCE (Continued):

Frank Tetzlaff, Sanitary Engineer, U.S.P.H.S., 120 Boylston Street, Boston, Massachusetts

Harold F. Clark, Bacteriologist, S.E.C., 4676 Columbia Parkway, Cincinnati, Ohio

F. W. Kittrell, Chief, Pollution Evaluation, U.S.P.H.S., 4676 Columbia Parkway, Cincinnati, Ohio

John T. Talty, Region I. C. Cons. U.S.P.H.S., Region I, 120 Boylston Street, Boston, Massachusetts

Dr. H. C. Huntley, U.S.P.H.S., Region I, 120 Boylston Street, Boston, Massachusetts

Edward F. M. Wong, Regional Shellfish Sanitary Consultant, U.S.P.H.S., DHEW, 120 Boylston Street, Boston, Massachusetts

Walter W. Mode, Acting Regional Director, U.S.P.H.S., DHEW, 120 Boylston Street, Boston, Massachusetts

Paul Busch, Harvard University, 115 Nottingham Road, Brighton, Massachusetts

H. Nugent Myrick, Research Fellow, Harvard University, 40 Oxford Street, Cambridge, Massachusetts

OTHERS IN ATTENDANCE (Continued):

Dr. Werner N. Grune, Professor of Sanitary Engineering, Chairman, Department of Civil Engineering, Merrimack College, North Andover, Massachusetts

Francis T. Bergin, MDC - Boston, 20 Somerset Street, Boston, Massachusetts

J. Frank Cassel, Chairman of Zoology, North Dakota State University, 45 Mystic Valley Parkway, Winchester, Massachusetts

Charlotte V. Kuh, Student, Radcliffe College, 56 Linneean Street, Cambridge, Massachusetts

Cornelius J. O'Leary, Graduate Student, Tufts University, Medford, Massachusetts

Lindley H. Hall, Graduate Research Assistant, Tufts University, Medford, Massachusetts

Alvin S. Goodman, Associate Professor of Civil Engineering, Northeastern University, Boston, Massachusetts

J. McKeown, Regional Engineer, N.C.S.I., Tufts University, Medford, Massachusetts

John W. Hermandez, NIH Fellow, Harvard University, 40 Oxford Street, Cambridge, Massachusetts

OTHERS IN ATTENDANCE (Continued):

Michael J. Bennett, Reporter, Boston Herald, Harrison Avenue, Boston, Massachusetts

Earl Bahher, Boston Globe, Boston, Massachusetts

John A. Long, Reporter, The Christian Science Monitor, Boston, Massachusetts

Arnold Goldstein, Independent Observer, 506 Pleasant Street, Winthrop, Massachusetts

Edward W. Leary, Mechanical Engineer, Lowell, Massachusetts

Hugh F. Cawley, Middle Street, West Newbury, Massachusetts

Harold C. Pratt, Jr., 157 Coolidge Hill, Cambridge, Massachusetts

William R. Simoneau, 237 Lake Street, Nashua, New Hampshire

Ronald Plante, 7 Ridge Street, Nashua, New Hampshire

Fred Ricciardelli, Lynnfield, Massachusetts

Vincent Liberto, Civil Engineer, NHFA, 346 Broadway, New York, New York

Edward F. Locke, Office Engineer, Public Service Company of New Hampshire, 1087 Elm Street, Manchester, New Hampshire

OTHERS IN ATTENDANCE (Continued):

Don Sinville, Public Service Company of New Hampshire, Manchester, New Hampshire

Roy W. Lenordsin, Municipal Services Department, 40 Water Street, Boston, Massachusetts

Frank Brown, Senior Engineer, New England Power Company, 441 Stuart Street, Boston, Massachusetts

PROCEEDINGS

OPENING STATEMENT

BY

MR. MURRAY STEIN

MR. STEIN: The conference is open.

This conference in the matter of pollution of the interstate and Massachusetts intrastate waters of the Merrimack and Nashua Rivers and their tributaries involving the States of Massachusetts and New Hampshire, the New England Interstate Water Pollution Control Commission, and the Department of Health, Education, and Welfare, is being held under the provisions of Section 8 of the Federal Water Pollution Control Act.

Under the terms of the Act, the Secretary of Health, Education, and Welfare is authorized to call a conference of this type when requested to do so by the Governor of a State and when on the basis of reports, surveys, or studies, he has reason to believe that pollution of interstate waters subject to abatement under the Act is occurring.

In a letter dated February 12, 1963, to the Honorable Anthony Celebrezze, Secretary of Health, Education, and

Welfare, Governor Endicott Peabody of Massachusetts requested that a conference be called to consider pollution of the interstate waters of the Merrimack and Nashua Rivers and their tributaries and the intrastate portion of those waters within the State of Massachusetts.

In accordance with that request and on the basis of reports, surveys and studies, a notice of conference was sent to Dr. Frechette, Commissioner of Public Health, Massachusetts Department of Public Health, to Mr. Healy, Technical Secretary, New Hampshire Water Pollution Commission, and to Mr. Knox, Secretary, New England Interstate Water Pollution Control Commission.

In accordance with the terms of the Act, this is a conference between the representatives of the State and interstate agencies and the representatives of the Department of Health, Education, and Welfare. These parties constitute the conferees. However, the representatives of the official agencies are privileged to bring whomever they wish to the conference and have them participate in it. For the people in the audience, you can be assured that if your State or interstate agency asks you to participate in it, we will be here and you will be heard.

The State of Massachusetts has designated as its conferee for this conference Mr. Worthen H. Taylor. For the

State of New Hampshire, the conferees are John Palazzi, Chairman, New Hampshire Water Pollution Commission, William A. Healy, Technical Secretary, New Hampshire Water Pollution Commission, Thomas A. LaCava, Chief Water Pollution Engineer, New Hampshire Water Pollution Commission, and Alexander J. Kalinski, Assistant Attorney General, legal counsel for the New Hampshire Water Pollution Commission. Representing the New England Interstate Water Pollution Control Commission is Mr. Joseph C. Knox. Mr. Herbert H. Rogers, the Regional Program Director for Water Pollution Control Activities, with headquarters in Boston, has been designated as conferee for the Department of Health, Education, and Welfare.

My name is Murray Stein and I'm from headquarters of the Department of Health, Education, and Welfare, in Washington, D. C.

As you know, the conference procedure is a tried and proven technique. In many of the States, the conference is used informally in the day to day business of water pollution control. And as long ago as 1921 the value of this technique was recognized by the United States Supreme Court when in the famous case of New York against New Jersey involving interstate pollution, it stated, and I quote:

> "We cannot withhold the suggestion inspired by the consideration of this case, that the grave problems

of sewage disposal presented by the large and growing population living on the shores of New York Bay is one more likely to be wisely solved by cooperative study and by conference and mutual concession on the part of representatives of the states so vitally interested in it than by proceedings in any court, however constituted."

We strongly support the conference technique, and we in the Federal program measure our success by the situations which are solved at the conference stage rather than by the court actions we bring.

Both the States and the Federal Government have responsibilities in dealing with water pollution control problems. The Federal Water Pollution Control Act declares that the States have primary rights and responsibilities for taking action to abate and control pollution. Consistent with this, we are charged by law to encourage the States in these activities. However, the Secretary of Health, Education, and Welfare also is charged by law with specific responsibilities in the field of water pollution control, in connection with pollution of navigable and interstate waters which endangers the health or welfare of persons. The Act provides that pollution of interstate waters, whether the matter causing or contributing to such pollution is discharged directly into such waters, or reaches such waters after discharge into a tributary of such waters, which endangers the health or welfare of persons in a State other than that in which the discharge originates, is subject to abatement. The Act also states that the Secretary shall call a conference at the request of the Governor of any State if that request refers to pollution of interstate or navigable waters which is endangering the health or welfare of persons only in the requesting State in which the discharges originate, or if the request refers to pollution of waters which is endangering the health or welfare of persons in a State other than that in which the discharge originates.

The purpose of this conference is to bring together representatives of the State and interstate water pollution control agencies and the Department of Health, Education, and Welfare, and other interested parties to review the existing situation, the progress which has been made, to lay a basis for future action by all parties concerned and to give the States, localities and industries an opportunity to take any remedial action which may be indicated under State and local law.

Under the Federal Law, the Secretary is required, at the conclusion of the conference, to prepare a summary of it which will be sent to the conferees. The summary, according to law, must include the following:

1. Occurrence of pollution of interstate and navigable waters subject to abatement under the Federal Act;

2. Adequacy of measures taken toward abatement of pollution;

3. The nature of delays, if any, being encountered in abating the pollution.

Subsequent to the holding of a conference, the Secretary of Health, Education, and Welfare, is required to make recommendations for remedial action if such recommendations are indicated.

In order to help us provide a serviceable summary, we suggest the conference discussions be directed toward covering those points outlined above. The conference conclusions and recommendations will be based solely on the material presented in this record. Mr. A. M. Zimmer is making a verbatim report of the conference, so we will have a complete record of what is said and done here. The conference summary and the verbatim report will be made available to the official State water pollution control agencies of Massachusetts and New Hampshire and to the New England Interstate Water Pollution Control Commission. We would suggest that all interested parties who wish a copy of the summary of the transcript, after the conference, get in touch with their State agencies.

All the conferees will be called upon to make statements. The conferees, in addition, may call upon participants they have invited to the conference to make statements. At the conclusion of each statement, the conferees will be given an opportunity to comment or ask questions. This procedure has proven effective in the past in developing a clear picture of the problem and in reaching agreements on equitable recommendations and conclusions.

At the end of all the statements, we will have a discussion among the conferees and try to arrive at a basis of agreement on the facts of the situation. Then we will attempt to summarize the conference orally, giving the conferees, of course, the right to amend or suggest modifications of the summary.

We would suggest that persons called upon to make statements come up to the lectern to speak so that everyone can hear them, and that they identify themselves as to name and affiliation.

At this point we have a reservation of rights statement by the State of New Hampshire and the New Hampshire Water Pollution Commission, which we would like to have inserted in the record as if read. Without objection, that will be done.

(The following is the statement above referred to:)

RESERVATION OF RIGHTS STATEMENT OF THE STATE OF NEW HAMPSHIRE AND THE NEW HAMPSHIRE WATER POLLUTION COMMISSION CONCERNING THE FEBRUARY 11, 1964 CONFERENCE ON THE MERRIMACK AND NASHUA RIVERS

My name is Alexander J. Kalinski. I am an Assistant Attorney General for the State of New Hampshire. I appear here today as a legal representative of the State of New Hampshire and of the New Hampshire Water Pollution Commission, the state agency charged with the responsibility of administering our water pollution law.

The purpose of this brief statement is to set forth a reservation of rights by the State of New Hampshire and the New Hampshire Water Pollution Commission with reference to the legality of this conference, and to clarify, for the record, the extent of our conditional participation in this conference.

First of all, the State of New Hampshire and the New Hampshire Water Pollution Commission challenge the legality of the calling and holding of this conference by the Secretary of the Department of Health, Education, and Welfare, upon three grounds:

1. There is no jurisdiction in the Secretary to call such a conference as the first step of an enforcement proceeding under the provisions of the Federal Water Pollution Control Act, 33 U.S.C. 466, et seq., in the light of the factual background and circumstances existing in this situation. In fact, the Secretary exceeds his authority and contravenes the clear intent of the statute by calling such a conference as the first step in an enforcement proceeding.

2. This conference proceeding is procedurally deficient in that the Secretary, although he has authority under the statute, has failed to promulgate any regulations to cover the procedures to be followed at such a conference. Past experience indicates that such so-called conferences have been held more on the basis of a hearing than a conference, and what might be called a probable cause hearing at that. Such procedures are legally insufficient and without any statutory basis.

3. There is a serious question concerning the

constitutionality of the enforcement provisions of the Federal Water Pollution Control Act, 33 U.S.C. 466, et seq., insofar as the right of the United States to bring an enforcement and abatement action on interstate waters is concerned without any purpose relating to the control of navigation or the regulation of commerce on such waters being sought thereby.

Reserving its rights to challenge this conference on the legal grounds set forth above should it later be necessary to do so, the New Hampshire Water Pollution Commission has designated the following individuals to participate as conferees in this conference:

John Palazzi, Chairman, New Hampshire Water Pollution Commission.

William A. Healy, Technical Secretary, New Hampshire Water Pollution Commission.

Thomas A. LaCava, Chief Water Pollution Engineer, New Hampshire Water Pollution Commission.

Alexander J. Kalinski, Assistant Attorney General, legal counsel for the New Hampshire Water Pollution Commission.

T. H. MacDonald

MR. STEIN: We also have a statement from the Honorable Torbert H. MacDonald of Malden, a Representative in the U. S. Congress of the Seventh District. His statement is as follows:

"Mr. Chairman, I want to thank you for the opportunity to testify this morning before your enforcement conference on pollution in the Merrimack and Nashua Rivers. I know that the conferees, representing Federal, State and local water pollution control agencies, hope to reach an agreement on the program for action to restore these waters to their former healthy state.

"As a U. S. Congressman, I will devote my remarks to the role and activity of the Federal Government in the vital area of water pollution control. It is my privilege to serve on the Natural Resources and Power Subcommittee of the House Committee on Government Operations. This Subcommittee has been making an exhaustive study of the Nation's water contamination problems. The Subcommittee has taken nineteen days of testimony in Washington last May and June and followed these hearings with inspection trips and field hearings in New Jersey, Illinois, Connecticut, the State of Washington, and Texas. A visit to Alabama is scheduled for next week. Thus, I, along with my colleagues on the Subcommittee, have had the opportunity to hear from those actually working in this area and to personally observe water pollution problems and control programs in widely separated regions of the United States. These hearings, both in Washington and in other parts of the Nation, have impressed me with the magnitude of the problem, the dedicated efforts which are being put forth to solve this problem and the difficult job that has to be done.

"The testimony before the Subcommittee has clearly set forth the problem and the task ahead. We know that a relatively fixed water supply must meet the needs of a growing population; that modern technology, and an increasing urbanization compound the problem; that the re-use of available water will be more and more necessary; and that pollution must be controlled and abated at an accelerated pace if we are to have enough water of adequate quality in the years ahead. These goals call for the best efforts of the States and our interstate agencies, of municipalities and of industry. It also demands public awareness and concern.

"The Federal Water Pollution Act, legislation which I actively supported in the Congress, recognizes the primary rights and responsibilities of the States in preventing and controlling water pollution. It holds out the support of the Federal Government through research, technical services and financial assistance to States, interstate agencies, and municipalities. In Massachusetts, as of November 30, 1963, eighty-nine projects had received Federal money under the Act which totals $9,559,366 for the construction of needed waste treatment works. Unfortunately even this sizeable sum has not been sufficient to meet the backlog of applications. Under the law, the Massachusetts Department of Public Health has control over which project shall take priority over other projects based on financial as well as water pollution control needs.

"The principal thrust of the Federal program is, and I firmly believe should continue to be, based on a cooperative effort. The abatement authority which the Act confers on the Secretary of Health, Education, and Welfare calls for a three-step enforcement procedure -- a conference, a public hearing and court action. The latter action is only taken if the preceding step does not result in timely action to abate pollution. There have been an impressive record of abatement schedules agreed upon at these conferences and on which action is followed through by the participants. I believe that experience has shown that the Congress was correct in establishing this conference apparatus.

"I wish you ever success in achieving the purpose of the conference -- to raise the quality of the waters of the Merrimack and Nashua Rivers and their tributaries for the benefit of the people of our Commonwealth and our neighboring State of New Hampshire who live and work along their banks. I offer my services to have the Federal Government work in harmony with our State agencies."

MR. STEIN: That concludes Congressman MacDonald's statement.

At this point, we would like to call on Mr. Herbert Rogers for the presentation of the Department of Health, Education, and Welfare, and other Federal agencies.

Mr. Rogers.

STATEMENT OF HERBERT H. ROGERS, CONFEREE AND REGIONAL PROGRAM DIRECTOR, WATER SUPPLY AND POLLUTION CONTROL, REGION 1

MR. ROGERS: I am Herbert H. Rogers, Regional Program Director, Water Supply and Pollution Control, Department of Health, Education, and Welfare, having responsibility for this program in the six New England States.

Region 1 of the Department of Health, Education, and Welfare has prepared a technical report on water quality and water uses of the Merrimack and Nashua River Basins.

The source of the data was State and interstate agencies as well as from other sources. Mr. Herbert R. Pahren, Senior Sanitary Engineer, of the Region 1 Water Supply and Pollution Control staff, will present the technical report.

STATEMENT OF HERBERT R. PAHREN, SENIOR SANITARY ENGINEER, REGION 1, WATER SUPPLY AND POLLUTION CONTROL, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

MR. PAHREN: Mr. Chairman, Conferees, ladies and gentlemen:

In a letter dated February 12, 1963, Governor Endicott Peabody of Massachusetts requested the Honorable Anthony J. Celebrezze, Secretary of Health, Education, and Welfare, to call a conference to consider the pollution of the Merrimack River, the Nashua River, and tributaries of these rivers, which affects both the interstate reaches of these waters and the intrastate portions within Massachusetts.

On September 23, 1963, Mr. Celebrezze announced that such a conference would be held on February 11, 1964, in Boston.

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This report is based on previous reports, data and other material furnished by the Massachusetts Department of Public Health, the New Hampshire Water Pollution Commission, and the New England Interstate Water Pollution Control Commission; information furnished by other interested federal agencies; data obtained by and official records of the Public Health Service; information furnished by the National Council for Stream Improvement; and the 1963 Report on Pollution Control for the Merrimack River in Massachusetts by Camp, Dresser and McKee, under contract with the Massachusetts Department of Public Health.

The cooperation of the numerous agencies and individuals is gratefully acknowledged.

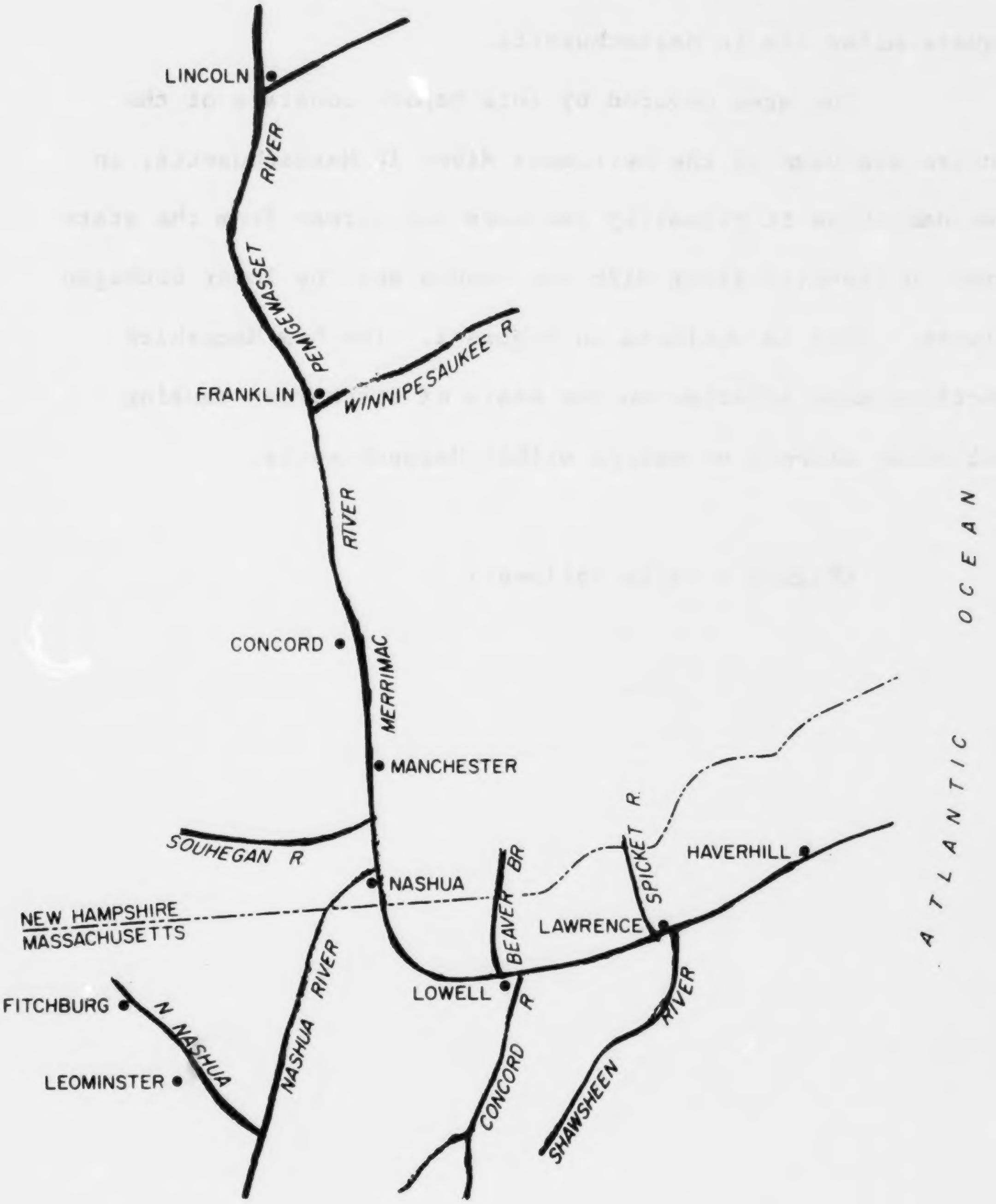
The Merrimack River Basin has its headwaters in the White Mountains in New Hampshire. The river flows in a southerly direction through New Hampshire and just after entering Massachusetts turns abruptly east for a distance of about 45 miles where it empties into the Atlantic Ocean at Newburyport, Massachusetts. One of its main branches is the Nashua River, which originates in Massachusetts, flows into New Hampshire, and is tributary to the Merrimack River at Nashua, New Hampshire. The main stem of the Merrimack is formed at the confluence of the Pemigewasset and Winnepesaukee Rivers at Franklin, New Hampshire, and has a total length of

116 miles, the lower 22 miles of which are tidal. Lands drained by the Merrimack River consist of 5,010 square miles, of which 3,800 square miles are in New Hampshire and 1,210 square miles lie in Massachusetts.

The area covered by this report consists of the entire drainage of the Merrimack River in Massachusetts; in New Hampshire it primarily includes the stream from the state line to Franklin along with the Nashua and the lower Souhegan rivers. This is outlined in Figure 1. The New Hampshire sections were selected on the basis of discharges causing pollution effects on waters within Massachusetts.

(Figure 1 is as follows:)

MERRIMACK RIVER
NEW HAMPSHIRE — MASSACHUSETTS
FIGURE I


LINCOLN
PEMIGEWASSET RIVER
FRANKLIN
WINNIPESAUKEE R
MERRIMAC RIVER
CONCORD
MANCHESTER
SOUHEGAN R
NASHUA
NEW HAMPSHIRE
MASSACHUSETTS
BEAVER BR
SPICKET R
HAVERHILL
LAWRENCE
LOWELL
FITCHBURG
LEOMINSTER
N. NASHUA
NASHUA RIVER
CONCORD R
SHAWSHEEN RIVER
ATLANTIC OCEAN

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BACKGROUND

The water quality condition of the Merrimack River has been of public concern for more than 75 years. Examination of the water for the then existing untreated water supplies for Lowell and Lawrence began in 1887.

The governing body of Massachusetts ordered the State Board of Health to report on the sanitary condition of the Merrimack in 1908, and this report, to the effect that pollution was increasing rapidly, was made in 1909. In 1909 the State Board of Health was again ordered to report, and this report, made in 1913, stated that the objectionable conditions found were due to large quantities of wool scouring wastes, other industrial wastes, and raw municipal sewage being dumped into the river. It also stated that the Merrimack was considerably polluted at the point at which it entered Massachusetts. The report recommended waste treatment by the cities and towns. The Department of Public Health was again ordered to investigate Merrimack River pollution in 1923, and the report was delivered in 1924. This report suggested that the problem could be solved by building sewage and industrial treatment plants locally or by constructing a trunk sewer from Lowell to the ocean without treatment. The trunk sewer to the ocean was recommended as being somewhat cheaper, with total construction cost estimated at $9,992,400. In 1928 the Department of Public Health was again directed to investigate pollution in the Merrimack, and this report, made in 1929, indicated a marked reduction in wastes due to the business depression, but the river was still excessively polluted.

The Acts of 1935 created the Merrimack River Valley Sewerage District and the Merrimack River Valley Sewerage Board and provided that they remain in existence only until January 1, 1936, unless $10,000,000 had been provided by the federal government for construction. No money was appropriated. The Acts of 1936 re-established these entities until January 1, 1938, with no appropriation of funds but with power to start construction if federal funds were donated. In 1937 a special commission was created to study problems of the Merrimack Valley, including pollution of the river. This commission report, made in 1938, recommended the trunk sewer to the ocean with primary treatment at a revised construction cost estimate of $27,050,000.

In 1936 and 1938 the Federal Works Progress Administration published reports on the Nashua and Merrimack rivers. The two reports list each significant sewage and industrial discharge to the streams along with their specific locations. It was stated that the Merrimack River was considerably polluted in its course through New Hampshire and that the river as it entered Massachusetts was too polluted for domestic water supply even after treatment but was not objectionable for recreation. The analyses indicated heavy pollution below Lowell and gross pollution below Lawrence and Haverhill. The Nashua River was polluted by domestic and industrial wastes from Fitchburg to the state line.

In 1945 a Joint Board consisting of the Merrimack River Valley Sewerage Board and the Department of Public Health was created to give further study and consideration to the Merrimack River pollution. There was still no money appropriated for construction to alleviate pollution; however, sufficient funds were made available to employ a consultant. The firm of Thomas R. Camp, Consulting Engineers, Boston, was retained. They delivered their complete and exhaustive report to be filed with the numerous others in 1947. This report indicated that during dry weather the Merrimack River was so grossly polluted by domestic sewage that the concentration of bacteria of fecal origin from the state line to the ocean was too high to permit the safe use of the river water for bathing and recreational purposes and for the growing of shellfish for marketing. It also stated that the Merrimack entered Massachusetts with a coliform count in excess of the allowable limit and that, if treatment plants were established in Massachusetts, untreated sewage from New Hampshire would be a menace to the use of the Merrimack River for recreational purposes upstream from Lowell. The report added that organic discharges, primarily from industrial wastes, grossly polluted the river from Lowell to the sea and resulted in a depletion of dissolved oxygen of the water during dry weather to an extent sufficient to destroy fish life and at times to cause odor nuisance. The engineers determined that construction cost of the trunk sewer from Lowell to the ocean had increased from the original State Board of Health estimate in 1924 of $9,992,400 to $50,675,200 as of 1947 with an additional $5,717,600 to be added for primary treatment. They recommended local and regional collection and treatment as being much cheaper (total construction cost $27,581,100).

During the succeeding 16 years the important task of studying and reporting on the serious pollution of the Merrimack River Basin was carried on by such entities as the New Hampshire Water Pollution Commission, the Massachusetts Department of Public Health, the New England-New York Inter-Agency Committee, the New England Interstate Water Pollution Control Commission, and the Public Health Service. All of these agencies have done their job well, and the serious conditions in the Merrimack River Basin have been thoroughly documented.

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In 1963, fifty years after treatment works were initially recommended for the cities and towns on the Merrimack, the firm of Camp, Dresser and McKee, Consulting Engineers, Boston, again prepared an engineering report for the Massachusetts Department of Public Health with recommendations and cost estimates for waste treatment construction to alleviate the serious pollution. As expected, the cost for remedial measures again increased.

SOURCES OF POLLUTION

Raw and partially treated sewage and industrial wastes discharge to most of the length of the Merrimack River and several of its tributaries. A summary of the waste discharges to the Merrimack River within the study area is given in Table 1. A similar summary for the Nashua River is presented in Table 2.

(Tables 1 and 2 are as follows:)

TABLE 1

Estimated Characteristics of Sewage and Industrial Wastes
Discharged to Merrimack River and Tributaries within Study Area

Discharge	Type of System*	Type of Treatment	Population Equivalents Discharged					
			Bacterial		Suspended Solids		Oxygen Demand	
			Number	% Total	Number	% Total	Number	% Total
NEW HAMPSHIRE								
Franklin	S-C	None	4,500	1.14	4,500	0.50	4,500	0.54
Boscawen	S-C	None	400	0.10	400	0.04	400	0.05
Brezner Tanning Corporation, Boscawen	-	None	-	-	2,500	0.28	1,500	0.18
Concord (Penacook)	-	None	2,000	0.50	50,000	5.53	32,000	3.84
Penacook Fibre Company, Penacook	-	Wastes recirculated	-	-	230	0.03	200	0.02
Concord	S-C	None	24,000	6.06	24,000	2.65	24,000	2.88
Pembroke	S	None	1,800	0.45	1,800	0.20	1,800	0.22
Allenstown	C	None	1,250	0.32	1,250	0.14	1,250	0.15
Hookset	-	None	1,000	0.25	1,000	0.11	1,000	0.12
State Industrial School	-	None	300	0.08	300	0.03	300	0.04
Manchester	C	None	62,000	15.65	62,000	6.86	62,000	7.43
M Schwer Realty Company, Manchester	-	None	-	-	650	0.07	6,500	0.78
Granite State Packing Company, Manchester	-	None	-	-	19,000	2.10	46,000	5.52
MKM Knitting Mills Inc, Manchester	-	None	-	-	400	0.04	4,000	0.48
Manchester Hosiery Mills, Manchester	-	None	-	-	10	-	50	0.01
Seal Tanning Company, Manchester	-	None	-	-	8,000	0.88	5,000	0.60
Stephen Spinning Company, Manchester	-	None	-	-	400	0.04	4,000	0.48
Waumbec Mills Inc, Manchester	-	None	-	-	700	0.08	7,200	0.86
Grenier Air Force Base	S	None	1,500	0.38	1,500	0.17	1,500	0.18

*Type of System: S = Separate Sewers; C = Combined Sewers.

TABLE 1 (Continued)

Estimated Characteristics of Sewage and Industrial Wastes Discharged to Merrimack River and Tributaries within Study Area

Discharge	Type of System*	Type of Treatment	Population Equivalents Discharged					
			Bacterial		Suspended Solids		Oxygen Demand	
			Number	% Total	Number	% Total	Number	% Total
Merrimack (Reeds Ferry)	S-C	None	200	0.05	200	0.02	200	0.02
Merrimack	S-C	None	200	0.05	200	0.02	200	0.02
Merrimack Leather Company, Merrimack	-	None	-	-	12,000	1.33	7,500	0.90
Wilton	C	None	1,000	0.25	1,000	0.11	1,000	0.12
Hillsborough Mills, Wilton	-	None	-	-	7,000	0.77	3,500	0.42
Milford	C	None	3,000	0.76	3,000	0.33	3,000	0.36
Granite State Tanning Company, Nashua	-	Settling	-	-	12,000	1.33	16,500	1.98
Nashua Finishing Company, Nashua**	-	None	-	-	6,500	0.72	30,000	3.60
Acme Cut Sole Company, Nashua***	-	None	-	-	10	-	325	0.04
Sanders Associates, Nashua****	-	None	-	-	850	0.09	1,200	0.14
Johns-Manville Company, Nashua	-	Settling	-	-	350	0.04	220	0.03
Nashua	S-C	Partly untreated, partly primary, partly secondary	28,500	7.19	28,200	3.12	30,300	3.63
Hudson	S-C	None	600	0.15	600	0.07	600	0.07
Derry	S	Secondary	40	0.01	600	0.07	400	0.05
Salem	C	None	1,000	0.25	1,000	0.11	1,000	0.12
TOTAL NEW HAMPSHIRE			133,290	33.6	252,150	27.9	299,145	35.9

*Type of System: S = Separate Sewers; C = Combined Sewers.

**Closed 12/31/63 but may be reactivated by another firm.

***Once a month 3,000-gallon batch of spent chrome tan solution dumped containing 24,000 mg/1 chromium. This probably causes toxic conditions in river during low flows.

****Plating baths periodically dumped. Probably contain copper and cyanide and may cause toxicity problem in stream.

TABLE 1 (Continued)

Estimated Characteristics of Sewage and Industrial Wastes
Discharged to Merrimack River and Tributaries within Study Area

Discharge	Type of System*	Type of Treatment	Population Equivalents Discharged					
			Bacterial		Suspended Solids		Oxygen Demand	
			Number	% Total	Number	% Total	Number	% Total
MASSACHUSETTS								
Southwell Combing Company, Chelmsford**	-	Grease recovery	-	-	30,800	3.41	22,100	2.65
H E Fletcher Company, Chelmsford	-	None	-	-	2,940	0.33	150	0.02
Gilet Wool Scouring Corp, Chelmsford***	-	None	-	-	13,600	1.50	19,700	2.36
J P Stevens & Co, Dracut	-	None	-	-	-	-	850	0.10
Dracut	S	None	1,000	0.25	1,000	0.11	1,000	0.12
Chemical Mfg Company, Ashland	-	Neutralization, sand filter	-	-	-	-	500	0.06
General Electric Company, Ashland	-	Neutralization, alkaline-chlorination	-	-	150	0.02	-	-
Marlborough	S	Secondary with Cl_2	130	0.03	900	0.10	600	0.07
Westborough	S	Secondary	120	0.03	150	0.02	150	0.02
Hudson Combing Co, Hudson	-	Settling and lagoons	-	-	1,000	0.11	950	0.11
Hudson	S	Secondary with Cl_2	70	0.02	1,080	0.12	720	0.09
Maynard	S	Secondary	510	0.13	1,020	0.11	680	0.08
Massachusetts Reformatory	-	Secondary	40	0.01	50	0.01	50	0.01
Concord	S	Secondary	180	0.05	225	0.03	225	0.03
Billerica House of Correction	-	Secondary with Cl_2	4	-	50	0.01	35	-
Billerica	S	Secondary with Cl_2	20	0.01	100	0.01	75	0.01
No Billerica Co, Billerica	-	None	-	-	1,410	0.16	5,530	0.66
Talbot Mills Inc, Billerica	-	None	-	-	450	0.05	4,120	0.49
Lowell Rendering Company, Billerica	-	Grease recovery	-	-	5,300	0.59	11,000	1.32

*Type of System: S = Separate Sewers; C = Combined Sewers.
**Also discharges 2,380 pounds of grease per day.
***Also discharges 3,120 pounds of grease per day.

TABLE 1 (Continued)

Estimated Characteristics of Sewage and Industrial Wastes
Discharged to Merrimack River and Tributaries within Study Area

Discharge	Type of System*	Type of Treatment	Population Equivalents Discharged					
			Bacterial		Suspended Solids		Oxygen Demand	
			Number	% Total	Number	% Total	Number	% Total
Ames Textile, Lowell	-	None	-	-	735	0.08	2,970	0.36
Vertipile Inc, Lowell	-	Centrifuges	-	-	2,730	0.30	1,560	0.19
Jean-Alan Products Company, Lowell	-	None	-	-	970	0.11	820	0.10
Robinson Top & Yarn Dye Works, Lowell	-	None	-	-	560	0.06	1,230	0.15
United Elastic Co, Lowell	-	None	-	-	290	0.03	650	0.08
Vogue Silver Co, Lowell	-	None	-	-	60	0.01	180	0.02
Middlesex Worsted Spinning Co and Suffolk Knitting Co, Lowell	-	None	-	-	75	0.01	1,120	0.13
Commodore Foods Inc, Lowell	-	None	-	-	1,350	0.15	1,180	0.14
Lowell	-	None	90,000	22.71	91,000	10.06	93,000	11.15
U S Veterans Hospital	-	Tertiary with Cl_2	-	-	20	-	15	-
State Hospital, Tewksbury	-	Secondary with Cl_2	26	0.01	130	0.01	130	0.02
Raytheon Co, Tewksbury**	-	Settling	-	-	100	0.01	250	0.03
Andover	S	Partly untreated, partly secondary	8,400	2.12	12,600	1.39	8,400	1.01
Mead Corporation, Lawrence	-	Wastes recirculated, save-alls	-	-	30,600	3.38	13,890	1.67
Oxford Paper Company, Lawrence	-	Wastes recirculated, save-alls, chemical treatment	-	-	51,100	5.65	32,100	3.85
Agawam Dye Works Inc, Lawrence	-	None	-	-	-	-	705	0.08
Merrimac Paper Company, Lawrence**	-	Wastes recirculated	-	-	5,100	0.56	4,400	0.53
Lawrence Wool Scouring Company, Lawrence***	-	Grease recovery	-	-	13,500	1.49	9,180	1.10

*Type of System: S = Separate Sewers; C = Combined Sewers.
**Data estimated by the Public Health Service.
***Also discharges 860 pounds of grease per day.

TABLE 1 (Continued)

Estimated Characteristics of Sewage and Industrial Wastes
Discharged to Merrimack River and Tributaries within Study Area

Discharge	Type of System*	Type of Treatment	Population Equivalents Discharged					
			Bacterial		Suspended Solids		Oxygen Demand	
			Number	% Total	Number	% Total	Number	% Total
Loom Weave Corporation, Lawrence**	-	None	-	-	440	0.05	1,760	0.21
Lawrence	C	None	70,000	17.67	149,000	16.48	120,000	14.39
Western Electric Company, No Andover	-	Neutralization	-	-	400	0.04	135	0.02
No Andover	C	None	9,000	2.27	18,800	2.08	13,600	1.63
Methuen	S	None	17,000	4.29	18,000	1.99	23,800	2.85
Continental Can Company, Haverhill***	-	Wastes recirculated, save-alls	-	-	77,000	8.51	47,000	5.64
Hoyt & Worthen Tanning Corporation, Haverhill**	-	Grease and oil recovery	-	-	7,000	0.77	4,400	0.53
Cowan & Shain Inc, Haverhill	-	None	-	-	10	-	790	0.09
C F Jameson Company, Haverhill	-	None	-	-	60	0.01	60	0.01
Haverhill	C	None	44,000	11.10	71,000	7.85	50,000	5.99
Amesbury Fibre Corporation, Amesbury	-	Wastes recirculated, save-alls	-	-	6,820	0.75	3,530	0.42
Merrimac Hat Co, Amesbury	-	None	-	-	235	0.03	1,120	0.13
Amesbury Metal Products Company, Amesbury	-	None	-	-	-	-	-	-
Amesbury	S	None	7,200	1.82	14,000	1.55	11,000	1.32
Newburyport	S	None	14,000	3.53	17,200	1.90	15,800	1.89
Salisbury	S	Primary	1,250	0.32	1,100	0.12	1,620	0.19
TOTAL MASSACHUSETTS			262,950	66.4	652,210	72.1	534,830	64.1
TOTAL BOTH STATES			396,240	100.0	904,360	100.0	833,975	100.0

*Type of System: S = Separate Sewers; C = Combined Sewers.
** Data estimated by the Public Health Service.
*** Data furnished by the Continental Can Company.

TABLE 2

Estimated Characteristics of Sewage and Industrial Wastes
Discharged to the Nashua River and Tributaries within Massachusetts

Discharge	Type of System*	Type of Treatment	Population Equivalents Discharged					
			Bacterial		Suspended Solids		Oxygen Demand	
			Number	% Total	Number	% Total	Number	% Total
Cushing Academy	-	Secondary with Cl_2	3	0.02	45	0.01	30	0.02
State Hospital (Gardner)	-	Secondary with Cl_2	16	0.10	80	0.02	80	0.05
Crocker, Burbank & Company	-	Save-alls, wastes recirculated, starch substitution, settling	-	-	184,600	34.78	39,650	25.97
Fitchburg Paper Company	-	Save-alls, wastes recirculated, retention aids	-	-	108,200	20.39	37,060	24.27
Falulah Paper Company	-	Vacuum filtration of sludge, chemical precipitation, wastes recirculated	-	-	115,400	21.74	27,940	18.30
Fitchburg	S-C	Secondary	3,150	19.35	6,300	1.19	4,200	2.75
Mead Corporation	-	Starch substitution, wastes recirculated	-	-	30,300	5.71	5,700	3.73
Leominster	S-C	Inadequate secondary	11,000	67.58	11,000	2.07	11,000	7.21
Atlantic Union College	-	Partly primary, partly secondary	210	1.29	210	0.04	280	0.18
Clinton	S	Secondary	1,300	7.99	1,560	0.29	1,040	0.68
Girls Industrial School	-	Secondary	15	0.09	18	0.01	18	0.01
Ayer	S	Secondary	375	2.30	750	0.14	500	0.33
Hollingsworth & Vose Co	-	Settling, wastes recirculated	-	-	1,470	0.27	6,650	4.36
Groton Leatherboard Co	-	Settling, wastes recirculated	-	-	5,880	1.11	2,120	1.39
Groton School	-	Secondary	8	0.05	10	-	10	0.01
St Regis Paper Company	-	Save-alls, wastes recirculated	-	-	64,700	12.19	16,200	10.61
Pepperell	S	None	200	1.23	200	0.04	200	0.13
TOTAL			16,277	100.0	530,723	100.0	152,678	100.0

*Type of System: S = Separate Sewers; C = Combined Sewers.

The content of waste discharges from either treated or untreated sources may be described in terms of bacterial, suspended solids, or oxygen demand population equivalents. For example, a bacterial population equivalent may be defined as the quantity of coliform bacteria contributed to a stream by the daily untreated discharge from one person.

BACTERIA

Billions of bacteria, frequently including disease-causing organisms, are contained in the daily excreta of each person. If these bacteria are not drastically reduced by suitable treatment of the wastes, large numbers will be found in the streams receiving the wastes. Coliform bacteria, whose normal habitat is the lower intestines of warm-blooded animals, including men, are normally used as indicators of recent bacterial pollution.

Only 23 of 48 jurisdictions responsible for the discharge of sewage in the study area have any type of treatment. Of these 48, only one of 23 discharging directly to the Merrimack main stem has any treatment.

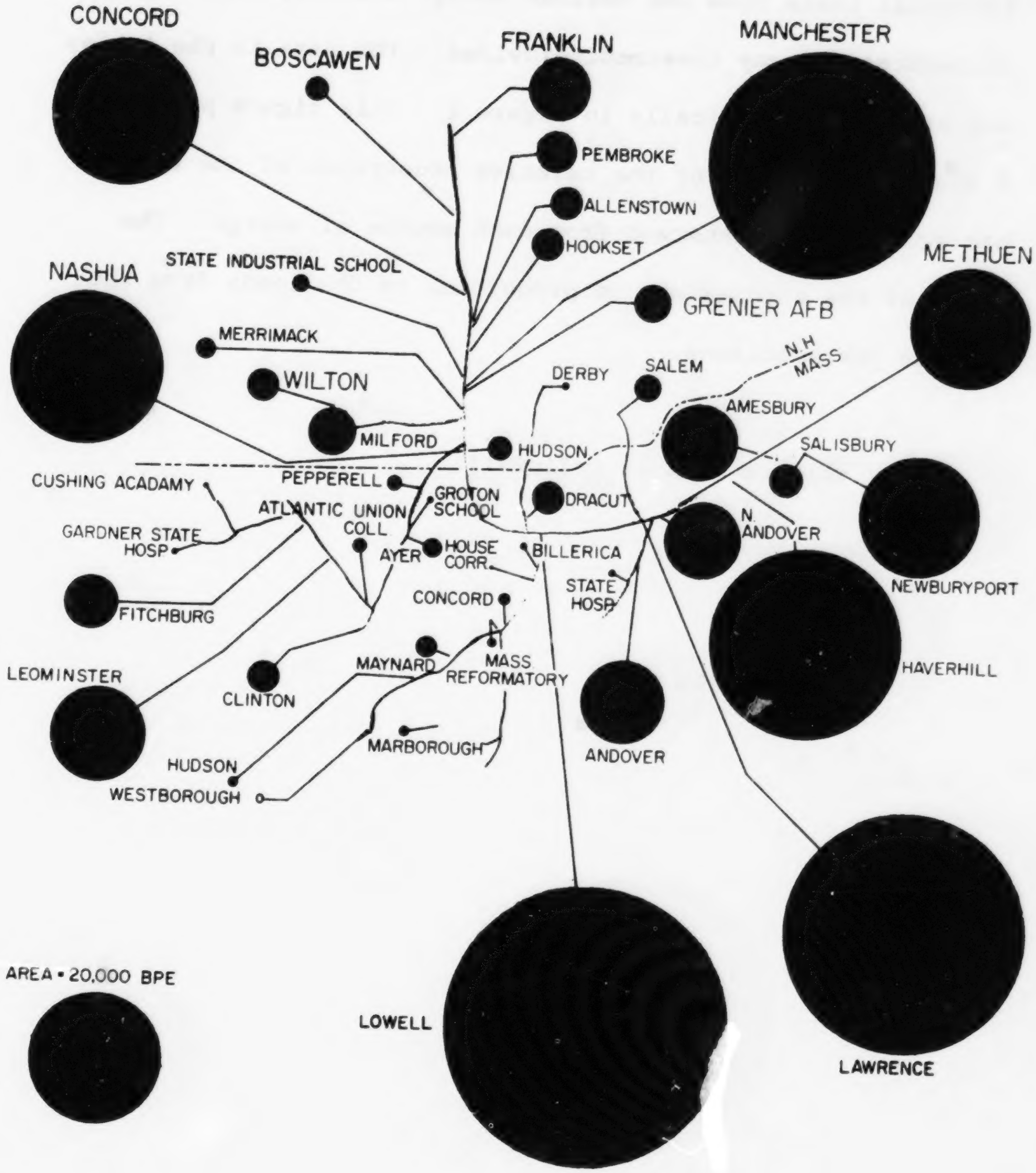
The total sewered population of the 48 jurisdictions is estimated to be 533,000. The treatment presently provided is estimated to reduce the over-all bacterial content of the sewage about 23 per cent, leaving bacteria equivalent to those in the raw sewage from 413,000 persons to enter the streams.

Tables 1 and 2 contain the estimated discharged bacterial loads from the various sewage sources, with estimated allowances for any treatment provided. The data in the tables are presented graphically in Figure 2. This figure provides a visual impression of the relative proportion of the total bacterial load discharged from each source of sewage. The areas of the circles are in proportion to the loads from the various jurisdictions.

(Figure 2 is as follows:)

ESTIMATED BACTERIAL LOADS

FIGURE 2


CONCORD
BOSCAWEN
FRANKLIN
MANCHESTER
PEMBROKE
ALLENSTOWN
HOOKSET
STATE INDUSTRIAL SCHOOL
NASHUA
METHUEN
GRENIER AFB
MERRIMACK
WILTON
DERBY
SALEM
N.H
MASS
AMESBURY
MILFORD
HUDSON
SALISBURY
CUSHING ACADAMY
PEPPERELL
GROTON SCHOOL
DRACUT
ATLANTIC UNION COLL
GARDNER STATE HOSP
AYER
HOUSE CORR.
BILLERICA
N ANDOVER
NEWBURYPORT
STATE HOSP
FITCHBURG
CONCORD
MAYNARD
MASS REFORMATORY
LEOMINSTER
CLINTON
HAVERHILL
ANDOVER
HUDSON
MARBOROUGH
WESTBOROUGH
AREA = 20,000 BPE
LOWELL
LAWRENCE

Of the estimated total bacterial loads, including the Nashua River, 32 per cent is discharged in New Hampshire and 68 per cent in Massachusetts. Sewage which is discharged without any treatment whatsoever accounts for 94.2 per cent of the total.

The four largest individual bacterial loadings to the Merrimack River come from Lowell, with 22.7 per cent; Lawrence, with 17.7 per cent; Manchester, with 15.6 per cent; and Haverhill, with 11.1 per cent. All four discharge their sewage raw, and combined they account for two thirds of the total bacterial load.

In the Nashua River Basin, the town of Leominster is responsible for most of the bacterial discharges due to inadequate sewage treatment facilities. Only one town, Pepperell, discharges raw sewage.

SUSPENDED SOLIDS

Suspended solids data were not available for several industrial sources and had to be estimated from known loadings from other plants with similar operations. The overall suspended solids discharges to streams of the study area are equivalent to that in the raw sewage of approximately 1,435,000 persons. Of this loading, approximately 1,183,000 population equivalents originate in Massachusetts. Over-all, an estimated 836,000 suspended solids population equivalents are discharged directly by industry and 599,000 by municipal or domestic sources. In the Nashua River Basin alone, over 96 per cent of the 530,700 population equivalents of suspended solids are discharged by industries.

By far the largest source of suspended solids come from the three paper industries of Fitchburg, Massachusetts. About 408,000 population equivalents, over one fourth of the suspended solids in the entire study area, come from Crocker, Burbank & Company, Fitchburg Paper Company, and Falulah Paper Company of this town. Other large sources of suspended solids are the discharges from Lawrence, Massachusetts, with 250,000 population equivalents, and the discharges from Haverhill, Massachusetts, with 155,000 population equivalents.

BIOCHEMICAL OXYGEN DEMAND

Sewage and industrial wastes presently discharged to the streams have an estimated biochemical oxygen demand population equivalent of 987,000. It is estimated that existing municipal and industrial pollution abatement measures reduce the original BOD loadings to the streams by 12 per cent.

Contributions of wastes with large biochemical oxygen demand are the discharges from Lawrence, Massachusetts, with 182,000 population equivalents; discharges from Manchester, New Hampshire, with 135,000 population equivalents;

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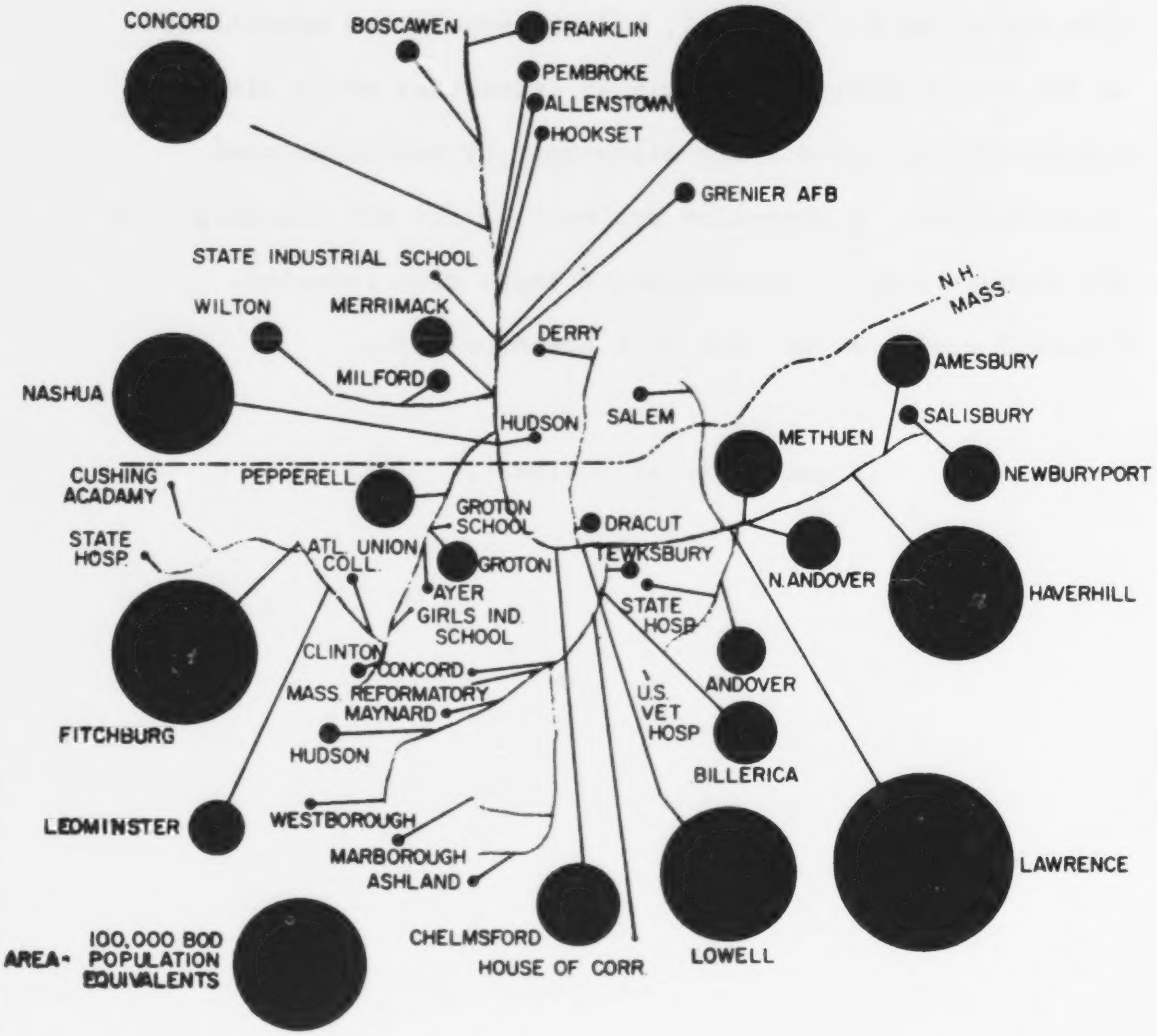
discharges from Fitchburg, Massachusetts, with 109,000 population equivalents; discharges from Lowell, Massachusetts, with 103,000 population equivalents; and discharges from Haverhill, Massachusetts, with 102,000 population equivalents. New Hampshire discharges account for 299,000 population equivalents and Massachusetts discharges for 688,000 population equivalents. Over-all, 463,000 population equivalents of BOD are discharged directly by industries while 524,000 population equivalents are discharged by non-industrial jurisdictions. Eighty-nine per cent of the BOD discharged to the Nashua River in Massachusetts comes from industry. Figure 3 presents the data in a graphical form.

(Figure 3 is as follows:)

BIOCHEMICAL OXYGEN DEMAND LOADS

FIGURE 3


CONCORD
BOSCAWEN
FRANKLIN
PEMBROKE
ALLENSTOWN
HOOKSET
GRENIER AFB
STATE INDUSTRIAL SCHOOL
N.H.
MASS.
WILTON
MERRIMACK
DERRY
AMESBURY
MILFORD
NASHUA
SALEM
SALISBURY
HUDSON
METHUEN
NEWBURYPORT
CUSHING ACADAMY
PEPPERELL
GROTON SCHOOL
DRACUT
STATE HOSP.
ATL. UNION COLL.
GROTON
TEWKSBURY
AYER
N. ANDOVER
HAVERHILL
GIRLS IND. SCHOOL
STATE HOSP.
CLINTON
CONCORD
ANDOVER
MASS. REFORMATORY
MAYNARD
U.S. VET HOSP
FITCHBURG
HUDSON
BILLERICA
LEOMINSTER
WESTBOROUGH
MARBOROUGH
ASHLAND
LAWRENCE
CHELMSFORD
HOUSE OF CORR.
LOWELL
AREA- 100,000 BOD POPULATION EQUIVALENTS

H. R. Pahren

MISCELLANEOUS

Several other waste constituents are important when considering the quality of water. The wool scouring operations in Chelmsford and Lawrence contribute over three tons per day of grease to the Merrimack River. At the Acme Cut Sole Company in Nashua, New Hampshire, the spent chrome tanning solution is dumped into the stream once a month. The solution contains 24,000 mg/l chromium.

I might point out for the record that after I sent my statement to the printer for reproduction, I learned that the Acme Cut Sole Company discontinued its tanning operation and no longer dumps the chromium solution into the river.

Plating baths are periodically discharged from Sanders Associates, Nashua, New Hampshire, and from several industries in Massachusetts. These wastes normally contain cyanides and heavy metals and could cause toxic conditions in the receiving streams. Natural color is prevalent in a number of streams in the Merrimack River Basin. However, it is estimated that 15 per cent of the color in the Merrimack River at Lowell, Massachusetts, originates at the Franconia Paper Corporation pulp mill at Lincoln, New Hampshire. The wastes from this company also contain biochemical oxygen demand equivalent to the raw sewage from approximately 400,000 persons. Although this BOD results in a severe local problem, its effects do not extend to Massachusetts as does the color.

WATER USES

MUNICIPAL USE

Since January 1963 the Merrimack has been used as the principal source of water supply for the city of Lowell, Massachusetts. Approximately 65,000 persons are served by this treated supply. Lowell's water intake is located seven miles below the New Hampshire-Massachusetts state line. Lawrence, Massachusetts, has been using the Merrimack as a source of municipal water supply since 1893, with an estimated 90,000 persons being served by the treated supply. Treated water from Lawrence is supplied to the neighboring town of Methuen.

Billerica uses the Concord River for its source of municipal water supply. A new water treatment plant was completed in 1955 for this purpose.

With the rapidly increasing populations in many of the cities and towns along the Merrimack River, additional municipalities may need to make use of this convenient source of water supply. Chelmsford, Tyngsborough, Andover, and Tewksbury, Massachusetts, have already been mentioned as potential users of the Merrimack. Burlington is considering the use of the Shawsheen River during part of the year.

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INDUSTRIAL USE

In 1954 approximately 185 million gallons per day of water were taken from the Merrimack River for industrial water use in the major industrial centers of Manchester, New Hampshire, and Lowell, Lawrence, and Haverhill, Massachusetts. Another 27 million gallons per day were taken from the North Nashua River by the Fitchburg industries. Industrial water use has probably been reduced because a number of the major water-using industries have moved out of the basin. About half of the industrial water use in 1954 was for cooling purposes.

Some industries use the Merrimack River for process water, even though the water quality is not good. Sand filters are used to pre-condition the process water. Feeder streams also are used for industrial water supplies.

Nashua River water is used for industrial process water in a number of instances. Where necessary to pre-condition the water, facilities ranging from coarse sand filters to ion exchange processes are used.

The Merrimack River is used for hydroelectric power to a large extent. On the Merrimack below Franklin, New Hampshire, there are five utility plants and 13 privately-owned industrial developments with total capacities of 28,670 and 22,320 kilowatts, respectively. These 18 plants utilize 177 feet of a total fall of 254 feet. Canal systems at Lowell and Lawrence, Massachusetts, divide the use of water among several plants at each location. During periods of low flow the Merrimack River flow below several of the dams is drastically reduced on weekends. This two-day reduction in flow seriously affects the capacity of the river to assimilate wastes.

RECREATION

Water-oriented recreational activity has been increasing rapidly on a national scale, especially near centers of population. However, the very real potential of the Merrimack River for recreational uses has not been fully realized. The U. S. National Park Service in 1954 estimated that, with the implementation of the recreation plan proposed, tangible benefits of 15 million dollars annually would be added to the economy of the Merrimack Basin. Highly significant intangible benefits would also be involved. No doubt the benefits would be greater today because of the increased pressure for recreation.

Fish and Wildlife

According to the U. S. Fish and Wildlife Service, parts of the Merrimack River in New Hampshire possess an outstanding fishery. However, there is a public aversion to using fish caught from the river for food because of the raw sewage emptied into the river. Any fishing is just for sport. Fabulous potential exists for fishing which may materialize if the pollution is cleaned up.

The Merrimack River between the Nashua River and the state line contains the following fish species in numbers: yellow perch, red-breasted sunfish, pumpkinseed, large-mouthed bass, eastern chain pickerel, northern yellow bullhead, northern common bullhead, eastern golden shiner, eastern common shiner, fallfish, long-nosed dace, eastern black-nosed dace, and eastern common sucker.

The Merrimack River from Amesbury to the mouth is heavily fished for striped bass.

Prior to construction of the dams on the lower Merrimack, hundreds of thousands of anadromous fish were caught annually in the Merrimack River. The most important species included salmon, shad, alewives, and smelt. The Merrimack River was famous for its salmon run, but this completely disappeared about 1920. Its disappearance is attributed, in part, to the dams and to pollution.

According to the U. S. Fish and Wildlife Service, the present shad run into the Merrimack is small, since the only area available for spawning, the lower section of the river, is heavily polluted. Fish can ascend the fishway in the Essex Dam at Lawrence and then proceed upstream to the

Pawtucket Dam at Lowell which is impassable. The number of shad annually ascending the Lawrence fishway is from 1,500 to 3,000 fish. Fishing for shad in the lower river is sporadic, and in some years there is none at all. In 1960 no fish were reported taken.

Officials of the U. S. Fish and Wildlife Service have stated that, if the polluted conditions in the Merrimack River were eliminated, fish elevators could be built at the dams and anadromous fish, including salmon, could be reintroduced in the Merrimack River.

Because of the polluted conditions in the Nashua River, it is not used for fishing. This river is populated by various types of coarse fish in the New Hampshire section. Based on the character of the stream it appears that improvement of its water quality would make recreational fishing possible.

The tidal marsh and mud flat complex in the Newburyport-Amesbury area is a large important waterfowl area. Another important waterfowl area is in the Nashua River Basin, particularly in the Lancaster-Bolton, Massachusetts, area.

Boating and Water Skiing

The Merrimack River is used for boating and water skiing from Lowell to the New Hampshire state line, above Lawrence, and in the tidewater near its mouth. Ski clubs have been formed by persons with this mutual interest, and ski jumps are provided for members. The Eastern Stock Outboard Boat Racing Championships were held in the Merrimack River above Lowell for the past two years, indicating the popularity of the river for boating. In the Nashua River there is a small amount of boating in the reservoir above Pepperell, and the Concord River is utilized for this purpose in Billerica.

Bathing

Lowell provides a public bathing beach and a change house along the Merrimack upstream of the city. The only other known bathing on the main stem takes place in the tidewater near the mouth of the river.

SHELLFISH

The soft-shell clam flats in the area of Newburyport, Massachusetts, at the mouth of the Merrimack River are highly polluted, largely as a result of sewage discharged to the river by neighboring communities. For that reason the beds were closed to shellfish taking in 1926 and have remained closed to date.

EFFECTS OF POLLUTION ON WATER QUALITY AND USES

BACTERIAL POLLUTION

Municipal sewage contains enormous numbers of bacteria, among which there are frequently pathogenic bacteria

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that can cause gastro-intestinal diseases such as typhoid fever, dysentery, and diarrhea. The pathogenic organisms, in densities too low to be detected by available laboratory procedures, can cause illness in persons who swallow water containing them. Infectious hepatitus, a virus disease, can also be caused by ingesting sewage-polluted water; and eye, ear, nose, throat, or skin infections may result from bodily contact with such waters. If the densities of pathogenic organisms are reduced by sewage treatment, dilution, or by natural self-purification, the hazards of contracting disease are proportionately reduced.

Sewage also contains bacteria of the coliform group which can readily be detected even at low densities. These bacteria, although harmless in themselves, are indicators of the probably presence of pathogenic bacteria and viruses. Coliform organisms are therefore used as a tool in evaluating bacterial pollution of streams and are used as a basis for water quality objectives for various water uses.

The results of coliform determinations are expressed in terms of most probable numbers (MPN) per 100 milliliters (ml) of water. One hundred milliliters is a little less than one-half cup. The coliform group usually is designated as total coliforms.

For municipal water supplies the New Hampshire limit is a mean of 1,000 coliform bacteria per 100 milliliters, provided the water treatment is adequate. Massachusetts has no definite limit, although a mean of not more than 5,000 MPN/100 ml is used as a guide.

Both states have standards for stream classifications involving bathing and recreational use of the streams. Water skiing is a sport involving bodily contact with water and may be considered a recreational use under the classification with coliform limits similar to those used for bathing. The Massachusetts limit is a mean of 2,400 MPN/100 ml, and in New Hampshire a logarithmic average of 240/100 ml is the limiting value. Neither state has adopted a total coliform objective of water quality for recreational uses in Class C waters, even though the uses of Class C waters include boating and fishing. Where such an objective has been adopted in other states, the commonly used limit is 5,000 MPN/100 ml. Where the water use demands, disinfection of a sewage effluent may be required in both New Hampshire and Massachusetts.

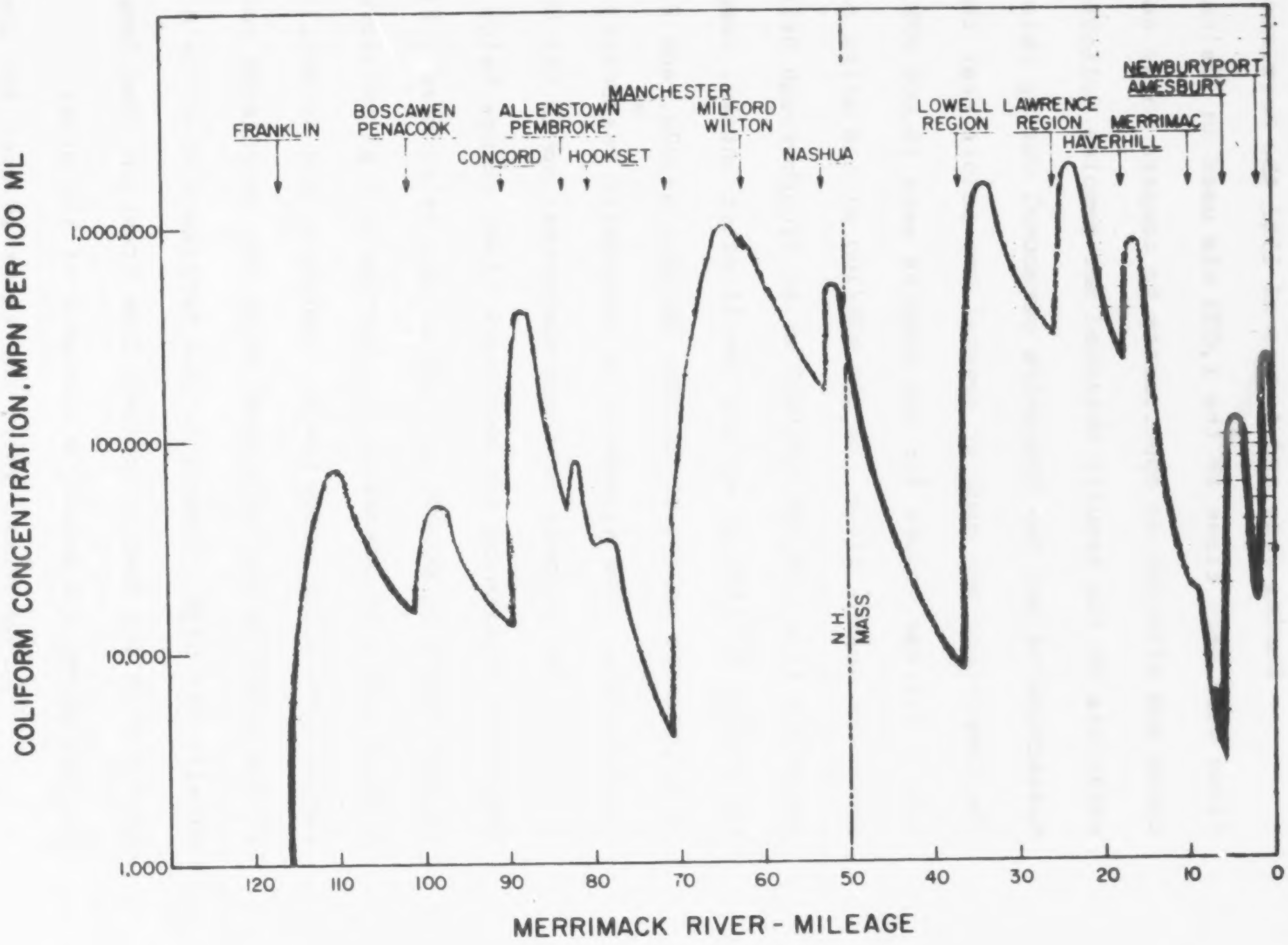
Based on present sewage discharges along the Merrimack River and flows of 1,000 cubic feet per second, the coliform bacteria densities were calculated. These densities are presented in Figure 4 for the river from Franklin, New Hampshire, to the mouth. Values range from 1,900,000 MPN/100 ml below Lawrence, Massachusetts, to 2,700 MPN/100 ml just above Amesbury.

A density of 210,000 per 100 ml was calculated at the New Hampshire-Massachusetts state line, and 21,000 per 100 ml at the Lowell municipal water intake, over four times the maximum used as a guide for water supplies in Massachusetts. At Tyngsborough Bridge, in the section used for recreation, the calculated coliform value was 63,000 per 100 ml, 26 times the Massachusetts limit for bathing. At this point a drop of water sprayed into the face of a boater or water skier may contain 42 coliform bacteria.

(Figure 4 is as follows:)

COLIFORM CONCENTRATION VS MERRIMACK RIVER MILEAGE

FIGURE 4



During July and August of 1963 the Merrimack River flows were very close to the 1,000 cfs used in the calculations and afforded an opportunity to compare these coliform densities to the results obtained for samples collected by Massachusetts and New Hampshire personnel during this period. The comparison was made at several key points near the state line. Average values for the samples were 28,000 MPN/100 ml above the Nashua River, 28,000 MPN/100 ml 1.6 miles below the state line, 46,000 MPN/100 ml at Tyngsborough Bridge, and 13,000 MPN/100 ml at the Lowell water intake, compared to calculated values of 22,000, 90,000, 63,000, and 21,000 respectively. The agreement is considered reasonably good.

The highest coliform concentration in the New Hampshire section of the Merrimack River occurs below Manchester where 1,000,000 per 100 ml was calculated. Figure 4 shows that, in Massachusetts extremely high coliform concentrations occur below Lowell, Lawrence, and Haverhill. Even at the mouth of the Merrimack River the calculated coliform density was high. Over-all, the Merrimack River is a health hazard with any bodily contact from Franklin, New Hampshire, to just above its mouth, a distance of 116 miles.

At Lawrence, where the river is used for the municipal water supply, the coliform bacteria were calculated to be 300,000 per 100 ml, 60 times the maximum used as a guide for water supplies. Average values obtained by the Massachusetts Department of Public Health just above Lawrence were 56,000 MPN/100 ml during their 1962 survey and 15,000 MPN/100 ml during their 1963 survey. The high bacterial density necessitates expensive treatment costs and very careful water plant operation to make the water safe to drink.

The calculated coliform value at the mouth of the Merrimack River was 96,000 MPN/100 ml. Results obtained by the Massachusetts Department of Public Health showed an average of 540 MPN/100 ml, with a maximum value of 3,500 MPN/100 ml near this point during their 1963 survey. The procedure for estimating residual coliform organisms from sewage discharges did not take into account the large dilution available from incoming ocean tides and would tend to overestimate the actual coliform densities in this section of the Merrimack River. In either case, however, the coliform density was considerably in excess of the maximum of 70 per 100 ml permitted for the unrestricted taking of shellfish.

Throughout most of the Nashua and North Nashua Rivers, the coliform densities are excessive and indicate a hazard to recreational users. The very high bacterial densities in Massachusetts are reduced by natural purification during the flow to the state line, and at Hollis Depot, New Hampshire, just across the state line, ten samples obtained in 1963 yielded a maximum of 9,300 MPN/100 ml and a mean of 2,600 MPN/100 ml.

The elimination of the shellfish industry near Newburyport, Massachusetts, by bacterial pollution has been mentioned. A preliminary estimate by the Massachusetts Department of Natural Resources indicates that the direct and indirect benefits associated with the reactivation of the shellfish industry in this area would be worth approximately three million dollars annually if pollution were adequately controlled.

SUSPENDED SOLIDS

Excessive suspended solids in a stream diminish the beauty of the water and settle to the stream bottom where they form sludge deposits which can produce offensive odors, reduce or eliminate aquatic life on which fish feed, and interfere with fish spawning.

When suspended solids flow through a slow-moving section of a stream such as an impoundment, the particles tend to settle out. The blanket of sludge on the bottom of the river covers the areas which otherwise would be used by fish in spawning and thereby reduces the fish population below its potential. In addition, the sludge-covered bottom is not a suitable habitat for the insect larvae and other aquatic life which normally live on the bed of a clean stream and serve as food for the fish. If the sludge deposits exert an oxygen demand, the oxygen may be depleted and offensive odors given off. In many cases the gases given off contain hydrogen sulfide. The sulfides may react with paints on buildings, boats, and structures to discolor the paint.

In tidewaters the suspended solids are deposited in the calmer waters along the banks of the Merrimack River during low flow and high tide and then are exposed when the tide is out. In certain areas an odor nuisance results. Behind the dams at Lawrence and Lowell, deep sludge deposits accumulate.

Suspended solids are particularly a problem in the Nashua River. Paper fibres can be seen along the banks of the stream, deposited there during higher flows. The stream passes through a number of ponds and impoundments, resulting in settling of the suspended matter. The solids decompose on the bottom, and in many cases the decomposition gases buoy up the sludge and the black sludge floats on the stream surface causing very unsightly conditions. Gas bubbles can be seen at many locations along the Nashua River. During one visit the river at the Route 225 bridge in Groton had an intense foul odor, was dark gray in appearance, and had much floating scum. This was truly a very sick river.

On the North Nashua River within and below Fitchburg, Massachusetts, the water has a white color and there are many floating solids and sludge banks visible.

OXYGEN DEMAND AND DISSOLVED OXYGEN

Both sewage and industrial wastes contain organic matter which decomposes and exerts an oxygen demand in the receiving stream. If the dissolved oxygen (DO) is reduced below an adequate level, the fish population and the aquatic life on which the fish feed are reduced. Most water pollution control agencies have adopted an average of 5 mg/1 as the minimum DO that is adequate to maintain the maximum potential sport fish population.

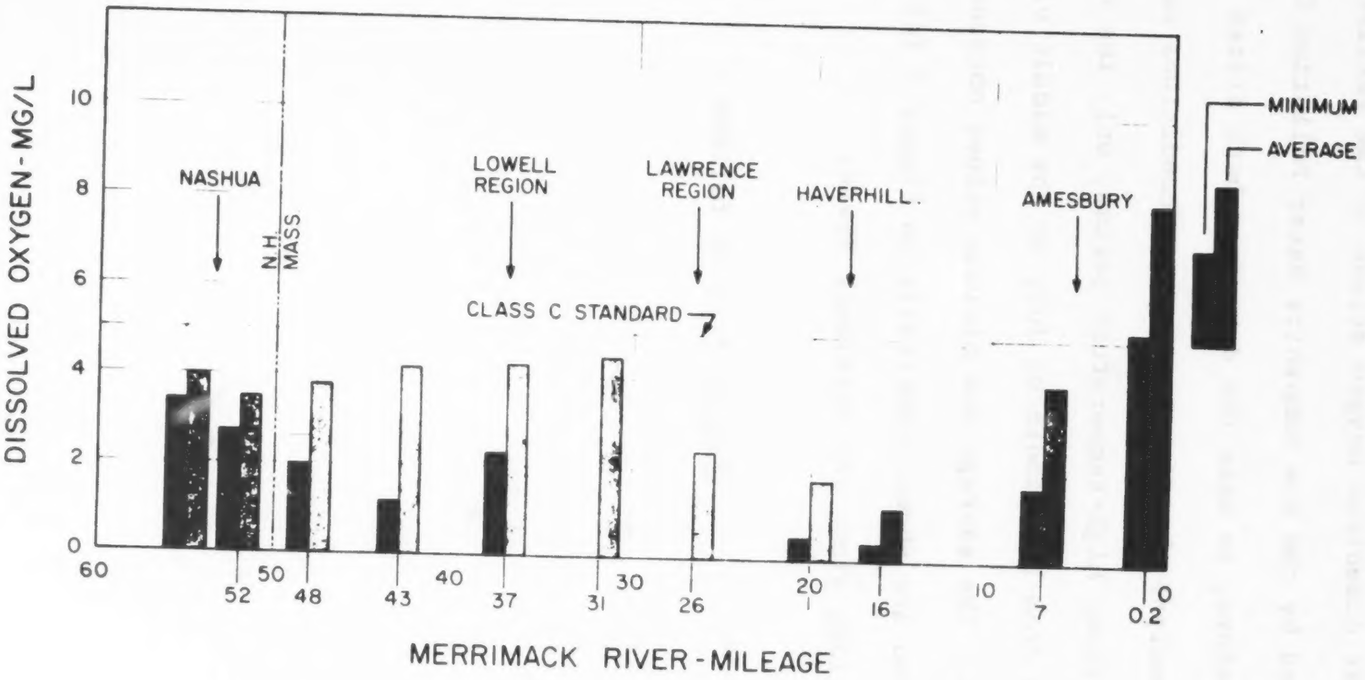
Both Massachusetts and New Hampshire have adopted 5 mg/1 as one of the minimum standards of quality for Class C waters. One of the definitions of Class C waters is: "suitable habitat for...common food and game fishes indigenous to the region."

Dissolved oxygen data for the Merrimack River were obtained during the last part of July and the first part of August 1963 by the Massachusetts Department of Public Health. The New Hampshire Water Pollution Commission obtained similar data from above the Nashua River confluence to below the state line from early June to the middle of August. Flows in the river during June were considerably higher than during the July-August period and, as expected, resulted in higher dissolved oxygen values in the earlier samples obtained by the New Hampshire Water Pollution Commission. Therefore, to make the data from both states comparable and to analyze the dissolved oxygen conditions during the critical-flow, high-temperature period, only the New Hampshire data from the middle of July to the middle of August were used. The average and minimum values obtained during this period are shown graphically in Figure 5 for various sampling stations along the Merrimack River.

(Figure 5 is as follows:)

DISSOLVED OXYGEN VS MERRIMACK RIVER MILEAGE

FIGURE 5



Except for the station near the mouth of the river where considerable dilution from the ocean was received, the average values for dissolved oxygen during the low-flow, high-temperature period were at or below 4.5 mg/l for the entire reach. The average dissolved oxygen below Haverhill was only 1.2 mg/l. Between Lowell and Lawrence and between Lawrence and Haverhill, zero dissolved oxygen values were obtained, indicating very serious conditions in the stream for fish life even if for short periods. Values between the state line and Lowell were as low as 1.2 mg/l. This sample was obtained 350 feet upstream of the Southwell Combing Company and on the opposite side of the river from this outlet. Along with another very low oxygen value of 2.2 mg/l at this sampling station three hours later, the results indicate a serious oxygen deficiency, undoubtedly resulting from upstream discharges. This conclusion tends to be confirmed by samples obtained by the New Hampshire Water Pollution Commission at Tyngsborough Bridge during the period of 1963 being analyzed. The average dissolved oxygen of these samples was only 3.5 mg/l.

From the dissolved oxygen standpoint, the Nashua River below the North Nashua River confluence is also in very poor condition. Throughout most of its length in Massachusetts, the dissolved oxygen is less than 50 per cent of saturation during the warm, low-flow period of the year and at times is at or near zero for considerable distances. The North Nashua is about 80 per cent of saturation above Fitchburg, but the dissolved oxygen decreases rapidly between Fitchburg and Leominster to as low as 20 per cent of saturation. Reaeration from rapids increases the DO in some reaches but is inadequate to prevent excessive depletion.

Intense algae blooms have been observed in the Nashua River in Pepperell and in New Hampshire. Undoubtedly these blooms are caused by nutrients from the combination of treated and untreated sewage and paper mill wastes. The series of ponds in the lower Nashua provide favorable habitats for algae growth. Dissolved oxygen data obtained near the Massachusetts-New Hampshire state line indicate typical effects of the algae that produce oxygen during the daylight but not at night. The diurnal fluctuation results in ranges of oxygen from supersaturation to near depletion.

During the period July 14-24, 1963, countless thousands of non-game fish were killed in the Nashua River near the Massachusetts-New Hampshire state line. The area affected covered 15 to 20 miles of stream. Observers attributed the kill to depletion of dissolved oxygen.

On July 27-28, 1963, another severe fish kill occurred in which thousands of fish were destroyed, this time below Manchester, New Hampshire. The kill resulted when flow was reduced for the weekend at Amoskeag Dam just above Manchester in order to conserve the water for peaking power during the week.

MISCELLANEOUS

Personnel of the Lowell Water Treatment Plant have complained of high concentrations of ammonia in the raw water. This ammonia combines with the chlorine added for disinfection purposes so that it is difficult to obtain the proper concentration of free residual chlorine. Some of the ammonia undoubtedly results from the discharge of sewage upstream. Water plant personnel counteract the ammonia by adding more chlorine, which increases the treatment costs.

Oil slicks and floating grease have been observed in the Merrimack River on several occasions. These may adhere to boats or other objects in the water and make the river less desirable for recreation.

The carbon chloroform extract (CCE) test is a measure of certain organic chemicals in a stream. Pesticides and various petro-chemicals are examples of materials which are detected by this test. A CCE limit of 0.2 mg/l has been established for treated water. Four river samples obtained in 1962 between Lowell and Haverhill had CCE values ranging from 0.3 to 0.7 mg/l. In August 1963 a sample at the Lowell water intake also exceeded 0.2 mg/1. Activated carbon is sometimes used to reduce these chemicals in the water, along with tastes and odors, but adds to the treatment cost.

In June 1963 nitriles, or organic cyanide compounds, were found in the raw water pumped to the Lowell water plant.

In 1962 an accidental spill of an organic chemical used in making plastics occurred at a Leominster, Massachusetts, industry. This chemical was traced all the way down the Nashua and Merrimack rivers.

The potentially toxic chrome wastes and plating wastes which are discharged by two Nashua industries without any known treatment have already been mentioned in Table 1. Periodic fish kills may result from these wastes.

On August 22, 1963, hundreds of fish were seen dying in the Merrimack River just below the confluence of the Nashua River. The cause may have been toxic conditions from an industrial discharge in the city of Nashua.

AESTHETIC CONSIDERATIONS

The adverse effects of floating solids on the beauty of the Merrimack River has already been mentioned. Other materials contribute to the opinion of the public that the Merrimack River system is badly polluted. For example, some of the business establishments in Lowell apparently dispose of their trash by throwing it out the window into the canal system to be carried into the Merrimack.

Condoms may be observed floating on the Merrimack River surface or washed up on the river bank at numerous locations. These detract from the enjoyment of the river for boating, swimming, or water skiing.

The Merrimack River has a black color which renders its appearance unsightly. Part of this apparent color is due to the black sludges on the bottom. The actual color is due not only to natural causes but also to industrial operations. This undesirable appearance may affect property values along the river and may reduce the river's appeal for recreational purposes. The color matter makes it more difficult to see a swimmer or water skier who is in danger of drowning and is below the water surface. It also increases the cost of municipal water treatment necessary to remove it.

White suspended matter from some of the paper mills in the Nashua Basin greatly detracts from the aesthetic value of this river. The turbidity is probably due to materials such as titanium dioxide which are used to give the paper a white appearance.

COMBINED SEWERS

Seventeen of the municipalities in the study area have combined sewers. Combined sewers, which are common in older municipalities throughout the country, receive both domestic sewage and storm water.

It is not economical to design sewage treatment plants to treat the large quantities of sewage and storm water which enter combined systems during storms. As a result, overflow devices are provided to bypass portions of the mixed storm flows from the system to the nearest watercourse without treatment. Thus, the raw sewage diverted during storms intermittently causes pollution of the receiving stream even after treatment has been provided for dry weather sewage.

Control of this type of intermittent pollution can be accomplished only by provision of separate sewers for sewage and storm water, by storage units which temporarily hold the mixed flows and bleed them back to the treatment plant when flows are lower, or by the installation of suitable treatment works for the mixed flows in addition to treatment works for the dry weather flows.

SUMMARY AND CONCLUSIONS

In a letter dated February 12, 1963, Governor Endicott Peabody of Massachusetts requested the Honorable Anthony J. Celebrezze, Secretary of Health, Education, and Welfare, to call a conference to consider the pollution of the Merrimack River, the Nashua River, and tributaries of these rivers, which affects both the interstate reaches of

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these waters and the intrastate portions within Massachusetts.

The area covered by this report consists of the entire drainage basin of the Merrimack River in Massachusetts; in New Hampshire it primarily includes the Merrimack River from the state line to Franklin along with the Nashua and the lower Souhegan rivers.

In 1913 the Massachusetts State Board of Health recommended that the cities and towns along the Merrimack River provide waste treatment facilities to reduce the pollution of the river. After 50 years the communities continue to discharge raw wastes to the stream.

Only 23 of 48 jurisdictions responsible for the discharge of sewage in the study area have any type of treatment. Of these 48, only one of 23 discharging directly to the Merrimack main stem provides treatment. Over-all, the existing sewage treatment facilities reduce the bacterial content of the raw sewage about 23 per cent. Bacteria equivalent to those in the raw sewage from 413,000 persons are discharged to the streams at present, 32 per cent in New Hampshire and 68 per cent in Massachusetts. Sewage which is discharged without any treatment whatsoever accounts for 94.2 per cent of the total.

The suspended solids in discharges of the study area are equivalent to those in the raw sewage of 1,435,000 persons, 82 per cent of which originate in Massachusetts. Industrial discharges account for over 58 per cent of the total. Considering the Nashua River Basin alone, industries discharge over 96 per cent of the suspended solids.

Sewage and industrial wastes presently discharged have an estimated biochemical oxygen demand population equivalent of 987,000 of which 299,000 population equivalents originate in New Hampshire. Existing municipal and industrial pollution abatement measures reduce the original BOD loadings to the streams about 12 per cent.

The Merrimack River is used as the municipal water supply for Lowell and Lawrence, Massachusetts. It is also used for industrial process water, cooling water and for hydroelectric power.

Certain sections of the Merrimack River in New Hampshire possess an excellent fishery. However, there is a public aversion to eating such fish because of the raw sewage emptied into the river. Fishing in the Merrimack River in Massachusetts is sporadic, with the better fishing being near the mouth. There is little or no anadromous fishing due to pollution and also because fish passage is blocked by dams. If pollution were adequately controlled, anadromous fish, including salmon, could be reintroduced in the Merrimack River.

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The Merrimack River has excellent physical resources for boating and water skiing. Boat racing contests are held in the section above Lowell.

The shellfish areas near Newburyport have been closed since 1926 due to bacterial pollution of the Merrimack River. If the pollution were reduced sufficiently, these areas could be reopened.

At practically no point in the Merrimack River does the bacterial quality of the water meet the objectives for body contact recreational activity. At the Tyngsborough Bridge, in a reach used for recreation, the calculated coliform density was 26 times the Massachusetts limit for bathing. These bacterial densities, derived from sewage, indicate that health hazards are involved in the use of the water for recreation. Near the Lowell and Lawrence water intakes, the calculated coliforms were, respectively, four and 60 times the suggested maximum values for water supplies.

Suspended solids from sewage and industrial wastes produce sludge deposits which reduce or eliminate aquatic life on which fish feed, interfere with fish spawning, and, in severe cases, produce offensive odors. In tidewaters the suspended solids are deposited in the calmer waters along the banks of the Merrimack River during low flow and high tide and then are exposed when the tide is out. In certain areas an odor nuisance results. Behind the dams at Lawrence and Lowell, deep sludge deposits accumulate. Suspended solids are particularly severe along the Nashua River. Paper fibres are deposited along the river bank, cover the stream bottom, and contribute to the oxygen demand. Black sludge, buoyed up by the decomposition gases, floats on the stream surface causing very unsightly conditions.

During the critical period of the summer of 1963, the Merrimack River had an average dissolved oxygen concentration of 4.5 mg/1 or less from above Nashua, New Hampshire, to Amesbury, Massachusetts. Below Lowell and Lawrence, Massachusetts, zero values were recorded. Five mg/1 of dissolved oxygen is generally accepted as the minimum DO that is adequate to maintain the maximum potential sport fish population. This minimum is one requirement of the New England Interstate Water Pollution Control Commission for Class C waters. The Nashua River at times becomes septic and gives off foul odors. The conditions of the Nashua adversely affect the use of the river in New Hampshire for fishing.

Visual evidences of pollution which diminish the beauty of the Merrimack and Nashua rivers and are offensive aesthetically include: cloudy or colored appearance of the water below sewage and industrial discharges; condoms floating in the stream or deposited on the banks; oil and grease floating in the water and collecting around boats; algae blooms; floating black sludge; black colored appearance of the river; and trash purposely dumped into the river.

Wastes discharged to the Nashua River Basin in Massachusetts cause pollution of the Nashua River which endangers the health and welfare of persons in New Hampshire and Massachusetts and therefore are subject to abatement under the provisions of the Federal Water Pollution Control Act.

Sewage and industrial wastes discharged to the Merrimack, Nashua, and Souhegan rivers and colored wastes discharged to the East Branch Pemigewasset River in New Hampshire, along with the wastes discharged to the Merrimack River and its tributaries in Massachusetts, cause pollution which endangers the health and welfare of persons in Massachusetts and therefore are subject to abatement under the provisions of the Federal Water Pollution Control Act.

This completes my statement, Mr. Chairman.

MR. STEIN: Thank you, Mr. Pahren.

Because of the extended nature of the report, we will be taking a very short recess now. It should be remembered that this report is the report of the Federal Department of Health, Education, and Welfare. There will be an opportunity for questions or comments by the conferees, and the short recess will give them an opportunity to confer and determine what they may be.

In addition to that, we have been asked to announce that the people from Massachusetts who wish to make statements get in touch with Mr. Worthen Taylor right here during this recess, and give him your name, so that he may call upon you in proper fashion.

We stand recessed for ten minutes.

(A short recess was taken.)

MR. STEIN: May we reconvene?

We would like to give you our anticipated schedule. We expect to recess for lunch at 12:00 sharp and reconvene at 1:30. If everyone is cooperative, we hope to finish today. This depends upon the brevity of the statements.

I should indicate to you, however, that as far as I am concerned, we are here to give you a full hearing. You may make as complete a statement as you wish. We are at your disposal.

We will now give our conferees an opportunity to comment on Mr. Pahren's statement, or ask any questions.

MR. HEALY: Mr. Chairman, this is purely an observation.

For the record, my name is William Healy, Technical Secretary of the Water Pollution Commission in New Hampshire.

Specifically, we do not agree at all with the conclusion arrived at by the author with regard to pollution arising in the State of New Hampshire interfering with or affecting the health or welfare of people in the State of Massachusetts.

There are many conclusions and inferences with respect to pollution contained in this report which we feel the facts do not support. However, we also know that there is a good deal of ground to be covered here today, and it would not serve any useful purpose for us to go into a detailed dispute concerning many of these conclusions which the Federal report contains.

I would merely leave it with the people in attendance here today, that we are firmly opposed to the conclusion arrived at with regard to pollution discharged in New Hampshire affecting the health or welfare in Massachusetts. We freely admit that there is pollution in the stream, and a detailed statement concerning our position and how we intend to cope with pollution in New Hampshire will be made at the appropriate time by our Chairman, Mr. Palazzi.

MR. STEIN: Thank you, Mr. Healy.

For the record, I think it should be pointed out that while the report is signed, these are not just the conclusions of the author, but the conclusions of the technical staff, the Water Pollution Control Staff of the Federal Department of Health, Education, and Welfare, and the Public Health Service. The author just signed this as the responsible representative. These are not just his conclusions, as I understand it.

Mr. Knox, do you have any comments?

MR. KNOX: No comment at this time.

MR. STEIN: Mr. Taylor?

MR. TAYLOR: No comment at this time.

MR. STEIN: Thank you very much, Mr. Pahren.

MR. ROGERS: In our Mr. Pahren's report, he pointed out the importance of bacterial pollution. We have some observations made by our Sanitary Engineering Staff at Cincinnati, and I would just like to note these for the record here.

I am quoting actually from a recent article by Mr. Kittrell and Mr. Furfari, and so I would like to just read this:

"Two present day factors require thoughtful consideration of the need for renewed emphasis on bacterial contamination of streams and for intelligent engineering control of such contamination. The increase in sewered population in the past 50 years undoubtedly has resulted in increased bacterial contamination of a great many streams despite the advances in wastewater treatment during the period. The continuing increase in aquatic recreation is resulting in direct exposure of increasingly large numbers of persons to the hazards of ingesting pathogenic organisms from sewage contaminated waters. The 40 million water sportsment of today have no protective barrier, comparable to the water treatment plant, between them and the pathogenic organisms in the water where they swim, ski, boat, fish, and hunt. Few of them either know whether the water is contaminated or realize the hazards of accidental or intentional ingestion of surface waters. Many still believe the ancient adage that water purifies itself every 7 miles (11.3 km)."

That was quoted from Mr. Kittrell's article.

Of interest also to this conference is a Public Health Service Study of the North Nashua River Basin conducted at the request of the Corps of Engineers in regard to three proposed Corps of Engineers reservoir sites near Fitchburg, Massachusetts. The study that is presently under way will present information on present and prospective municipal, industrial, and quality control water supply needs in the North Nashua River Basin. Another proposed Corps of Engineers Project entitled Livermore Falls, located on the Pemigewassett River near the headwaters of the Merrimack north of Plymouth, New Hampshire, is presently being reviewed by the Public Health Service.

Authority for regulating stream flow in the interest of improving water quality is provided by Public Law 660 - 84th Congress, as amended by PL 87-88. The pertinent extract of Section 2 (b)(1) reads as follows:

> "In the survey or planning of any reservoir by the Corps of Engineers, Bureau of Reclamation, or other Federal agency, consideration shall be given to inclusion of storage for regulation of stream flow for the purpose of water quality control, except that any such storage and water releases shall not be provided as a substitute for adequate treatment or other methods of controlling waste at the source."

This means that, under the law, releases from storage can be provided to regulate stream flow and improve water quality, but this storage and release shall not be used as a substitute for adequate treatment. In serious water pollution situations a desirable water quality goal can only be attained through a combination of two factors:

(1) Adequate treatment provided for all waste sources, adequate treatment being defined as secondary or biological treatment or its equivalent, plus (2) reservoir storage and releases to be supplied, in the case where

benefits are widespread or national in scope, by the Federal Government. The benefits to water quality by release from storage are evaluated and used as part of the financial justification in supporting the construction and operation of Federal multi-purpose water resource projects.

Although the amendment authorizing release from Federal storage reservoirs for water quality control was not enacted until the 87th Congress in 1961, a number of water resource projects are well under way incorporating this low-flow regulation provision feature. This authority could well be utilized to assist in improving water quality of the North Nashua and Merrimack Rivers.

Other Federal agencies having responsibility for various aspects of water resource development have been asked to participate in this conference. Several of these Federal agencies have indicated that they would make a statement.

MR. STEIN: Are there any questions or comments on the statement of Mr. Rogers?

(There was no response.)

MR. STEIN: All right, go ahead.

MR. ROGERS: First, I would like to call on Mr. Mark Abelson from the Department of the Interior. Mr. Abelson is the Northeast Field Committee Representative of the Department, and he has a couple of men on his staff who will participate too.

Mr. Abelson.

STATEMENT OF MR. MARK ABELSON, REGIONAL COORDINATOR, DEPARTMENT OF THE INTERIOR

MR. ABELSON: Mr. Chairman, Conferees, Ladies and Gentlemen:

My name is Mark Abelson. I am the Regional Coordinator here for the Department of the Interior.

The Department of the Interior, which is the principal Federal agency concerned with natural resources, has a definite interest in all waters of the country and in the entire pollution problem.

In order to coordinate the efforts of all those concerned with the related water problems, there must be comprehensive planning and activity among all interests.

The interest of the Department of the Interior in water can best be expressed by quoting from a recent statement by Secretary Udall before a congressional committee:

> "---the focus of Interior effort is directed to the maintenance of adequate national water supplies and adequate water quality for whatever uses

you may wish to make of this valuable resource. The Interior approach emphasizes the coordination and interrelation between uses and the effect of these uses on management and quality of the total water supply system.

"Maintenance of water quality involves not only the quality levels for human consumption, but also quality levels for consumption by other animal and plant life, for development of other natural resources, and for industrial processes. These quality considerations are interrelated. They can be understood and controlled best from the point of view of water as a resource, rather than from the point of view of a particular quality need."

In handling water problems over a period of years the Department has accumulated a great deal of experience. It has the facilities and the qualified manpower to deal with a wide variety of water problems.

The Department has six operating Bureaus in this region, all of which have an interest in the region's water resources, ranging from purely unbiased fact finders to strong advocates of clean waters. These Bureaus are:

Bureau of Mines

Geological Survey

M. Abelson

Bureau of Sport Fisheries and Wildlife

National Park Service

Bureau of Commercial Fisheries

Bureau of Outdoor Recreation

Interior Bureaus carry on water quality studies related to the physical, chemical, and in some degree, biological adequacy of natural and developed water supplies. These studies and research are chiefly those in which the skills and required knowledge are based on geology, chemistry, hydrology, engineering and other physical science aspects of water management. Interior's water quality research extends to the study of environments adequate for the propagation, production and control of both fish and wildlife resources, and for water based recreation.

In common with many others, Interior has interests and responsibilities in the economic and social aspects of water-quality management. We recognize that such factors as quantitative requirements, competitive uses, and marketability of water and associated products must be given consideration in all plans. Interior takes account of the economic impact and other values that protection of water quality will have on the community, the basin, the state and the nation.

Representatives of two of the Interior Bureaus are here today and will present statements concerning their interests in the waters of the Merrimack River Basin.

The Geological Survey will report on the degree to which hydrologic studies of the basin have been made, are in progress, or will be made, which are essential to the understanding of pollution and for water quality management.

The Bureau of Sport Fisheries and Wildlife will report on the effects of present water conditions on the fisheries resources, and for future fisheries potential in the river.

Mr. John Gottschalk, Regional Director, Bureau of Sport Fisheries and Wildlife will next present a statement for that Bureau, and he will be followed by Mr. Charles Knox, District Engineer, of the Geological Survey.

Thank you.

MR. STEIN: Thank you, Mr. Abelson, for a very comprehensive statement.

Perhaps we had better wait for questions or comments until all the Interior presentations are completed.

Mr. Gottschalk.

STATEMENT OF JOHN S. GOTTSCHALK, REGIONAL DIRECTOR, BUREAU OF SPORT FISHERIES AND WILDLIFE, DEPARTMENT OF THE INTERIOR

MR. GOTTSCHALK: Mr. Chairman, Conferees, Ladies and Gentlemen:

You have just had the long and the short, or maybe I should say the short and the long of the Interior Department.

My name is John S. Gottschalk. I represent the Bureau of Sport Fisheries and Wildlife, which, together with the Bureau of Commercial Fisheries, constitutes the U. S. Fish and Wildlife Service.

We are pleased to speak at this conference. The prospect of restoring the usefulness of the Merrimack River and its tributaries is brighter now than it ever has been. Throughout the nation, people are saying, "Let's do something about pollution!" We agree that now is the time to correlate and intensify all efforts to carry out realistic and effective pollution abatement programs.

The use of streams for waste disposal is a single-purpose use. We can no longer afford such luxury. Our expanding population demands that we make multiple-use of each of our resources. Pollution prevents multiple-use of our streams, and public recognition of this fact is growing.

Our communities will soon need to use rivers and their tributaries if the growing demands for recreation are to be satisfied. This is already true in the lower Merrimack Basin where the tide of urban expansion is rapidly submerging traditional recreational areas. It will soon be true in the upper Merrimack Basin. It is clear that we must plan to utilize each lake and stream to its maximum potential for production of fish and aquatic wildlife if we are to meet future human demands for fishing and hunting.

The anticipated demand can be shown by comparing the surface acres of fresh water now available to each of us with what may be expected. According to the 1960 Survey of Hunting and Fishing, the area available in New Hampshire in 1960 was 0.44 acres for each resident. By the year 2000, this will be 0.26 acres, almost a 50 per cent reduction. In Massachusetts, the area will decrease from 0.03 acres per person in 1960 to 0.02 acres in 2000. In the year 2000, we expect that there will be three fishermen for every angler in 1960. The number of fishermen will continue to increase at a faster rate than the general population.

The potential of the Merrimack River for satisfying these demands is enormous. The ORRRC report "Sports Fishing Today and Tomorrow" estimates that the main stem alone could support at least 290,000 man-days of fishing each year. In addition, the river could support several thousand man-days of hunting each year. The potential is magnified by the proximity of the river to urban areas. There are few other opportunities available to create new fishing and hunting areas where they are most needed.

The Fish and Wildlife Service is vitally concerned with the various aspects of fish and wildlife conservation and development within the Merrimack River Basin. Our concern reflects both the specific and general interest of the Congress in the conservation of the Nation's fish and wildlife resources. The general policy of the Federal Government is expressed in these words quoted from the Fish and Wildlife Act of 1956:

> "The Congress hereby declares that the fish, shellfish, and wildlife resources of the Nation make a material contribution to our national economy and food supply, as well as a material contribution to the health, recreation, and well-being of our citizens; that such resources are a living renewable form of national wealth that is capable of being maintained and greatly increased with proper

> management, but equally capable of destruction if neglected or unwisely exploited; that such resources afford outdoor recreation throughout the Nation and provide employment, directly or indirectly, to a substantial number of citizens; that the fishing industries strengthen the defense of the United States through the provision of a trained seafaring citizenry and action-ready fleets of seaworthy vessels; that the training and sport afforded by fish and wildlife resources strengthen the national defense by contributing to the general health and physical fitness of millions of citizens; and that properly developed, such fish and wildlife resources are capable of steadily increasing these valuable contributions to the life of the Nation."

Section 5 of the Fish and Wildlife Coordination Act specifically authorizes this agency to study the effects of pollution on fish and wildlife resources and to recommend measures to relieve the undesirable effects of pollution. Our work on pollution problems is related to fish and wildlife as affected by specific pollutants and is coordinated with the Public Health Service.

Under Section 2 of this same Act, we have a particular responsibility to ensure that consideration be given to the protection and enhancement of fish and wildlife resources in the planning, construction, and operation of water resources development projects in the Merrimack Basin whether planned and constructed by Federal agencies or under Federal license. In carrying out this responsibility we work closely with all Federal, state, and local agencies in order that all facets of public interests in water resources may be properly considered. Agencies like the Geological Survey, which collects data on the amount of dissolved oxygen available and other water quality factors, help us by providing basic information.

The Federal Power Act and the Fish and Wildlife Coordination Act authorize us to recommend the incorporation of fishways and other fish and wildlife conservation measures in licenses or permits for existing or planned water resources projects.

One of our concerns for clean water involves facilities operated by this Bureau. The National Fish Hatchery near Nashua, New Hampshire, plays an important role in the fishery management programs of the White Mountain National Forest and in stocking public waters of the States of New Hampshire and Maine. It produces 40,000 pounds of trout annually for stocking purposes. The Parker River National

Wildlife Refuge at the mouth of the Merrimack at Newburyport, Massachusetts and the new National Wildlife Refuge along the Concord and Sudbury Rivers in Massachusetts will need water supplies of good quality if they are to make their maximum contribution to fish and wildlife conservation.

The Merrimack River Basin is the fifth largest river basin lying wholly in New England. It covers an area of 5,010 square miles, of which 3,800 square miles lie in central New Hampshire and 1,200 square miles in Massachusetts. Unbroken woodlands cover most of the northern portion of the basin. The main stem Merrimack River is 110 miles in length and is tidal through the lower 22 miles of its length. The basin lies within an easy day's drive for ten and one-half million persons. By the year 2000, the ORRRC estimates, the population within this area will increase to more than 17 million.

Significant fish and wildlife resources are found throughout the Merrimack Basin. Forest game species predominate in the upper and central sections of the basin; upland and small game in the southern section. An estimated 4,000 deer are harvested annually in the basin and provide 100,000 man-days of hunting. Hunting for pheasant, cottontail rabbit, ruffed grouse, varying hare, woodcock, grey squirrel, and waterfowl provides an additional 200,000 -

250,000 man-days of recreation each year. Important fur animals include muskrat, beaver, mink, and otter.

The Merrimack and its tributaries support a variety of fishing. An important fishery for brook, rainbow, and brown trout exists in the northern section of the basin and in the colder waters of the southern section. There is lake, pond, and stream fishing for warm-water species, including smallmouth bass, largemouth bass, brown bullhead, yellow perch, pickerel, and walleye in the central and southern portions of the basin. Annual fishing pressure within the basin is presently in excess of 500,000 man-days.

The Pemigewasset River has trout in the upper reaches above Lincoln and warm-water species in the lower reaches between New Hampton and Bristol. Severe pollution caused by paper and pulp wastes has rendered the Pemigewasset River and its East Branch from Lincoln downstream to Plymouth devoid of fish life.

The Contoocook River, the largest tributary to the Merrimack, is adversely affected by pollution throughout its length. However, a fishery consisting of smallmouth bass, chain pickerel, bullheads, yellow perch, and white perch is found throughout the major portion of the river. Small populations of walleyes are found in the Riverhill section.

The Nashua River, from Fitchburg, Massachusetts, downstream, is one of the most grossly polluted rivers in the basin. Several sections of the Nashua River in Massachusetts and New Hampshire are in nuisance condition as a result of waste discharge. The Nashua River now offers little, if any, opportunity for fishing because of contamination. Fish do survive in less polluted sections, and in June 1963, a fish kill in the Nashua River was reported. Pollution was a contributory cause of this kill. In earlier times, Atlantic salmon, American shad, and herrings (alewives) were known to utilize this stream up to Groton, Massachusetts.

One of the significant effects of pollution is that it inhibits utilization of the limited fish populations which may exist. The main stem Merrimack River serves as a good example. Certain badly polluted sections of the river still support largemouth and smallmouth bass, chain pickerel, yellow perch, white perch, and bullheads. The New Hampshire Fish and Game Department has released walleye fry at various locations in the upstream section of the river. Walleye have been taken from the Merrimack River near Hooksett, New Hampshire. In 1960 a tremendous run of immature striped bass from 12 to 20 inches was observed in the Merrimack River at Lawrence, Massachusetts. The entire length of the main stem receives light fishing pressure in comparison to its potential. Fishermen naturally avoid waters known to be polluted.

The clam flats at the mouth of the Merrimack River at Newburyport, Massachusetts encompass 500-600 acres. It has been estimated that there are 80,000-100,000 bushels of legal sized clams on the flats. Their harvest is prohibited because of pollution. Adequate control of pollution would make these shellfish resources once again available for human consumption.

Proper control of pollution would bring full realization of the true fish and wildlife potential of the streams. The entire Merrimack Basin lies within easy reach of highly-populated urban areas. By the year 2000, we expect approximately 3,000,000 of the projected New England population of 17 million people will fish. An estimated 800,000 hunters will live in the area by this date. Fishing and hunting sites for these people will be in critical short supply in the future. Clean-up of the polluted sections would provide many thousands of man-days use for fishing. It would help to more evenly distribute pressure among the available fishing waters. It would enlarge feeding and nesting areas for waterfowl and other aquatic wildlife species and provide many additional man-days use for hunters.

In recent years there has been growing interest in the restoration of anadromous fishes to the Merrimack River Basin. Historically, this basin supported runs of Atlantic salmon, American shad, and alewives. All three species ascended the main stem Merrimack River to the junction of the Winnepesaukee River and Pemigewasset River. At this point, the American shad and alewives ascended the Winnipesaukee River to its feeder lakes; the Atlantic salmon ascended the Pemigewasset River upstream to Livermore Falls.

The first dam constructed on the main stem Merrimack River at Lawrence, Massachusetts was built in 1846, thus closing the entire basin above this point to anadromous species. Early restoration attempts in the form of fishways on downstream dams were inadequate. The recent impetus for anadromous fish restoration along the coast has emphasized the need for careful consideration of fishways for existing and future dams.

New Hampshire has conducted a preliminary biological survey of the Merrimack River Basin to determine the extent of potential salmon spawning areas. State biologists conclude that restoration of anadromous fish, including salmon and shad, is desirable and economically feasible when pollution problems have been solved. They estimate that the cost of providing adequate fishways in the basin would total about $700,000. Approximately 27,000 pounds of salmon with an estimated valuation of $270,000 could thereafter be taken annually. This preliminary investigation indicated that adequate spawning and resting area is available to support this size run. While these are estimates, they indicate the possibilities. Pollution is identified as one of the major obstacles. Some fishery authorities assert that an Atlantic salmon resource of important sport and commercial magnitude in the Northeast cannot be achieved without the reestablishment of spawning runs in the major rivers, such as the Merrimack.

In any course taken, adequate control of pollution would be an essential step toward the restoration of anadromous fish and, in addition, would be needed to realize the benefits from resident fish and aquatic wildlife species.

The goal of the pollution abatement program should be to restore both main stem and tributary streams to a quality level suitable for a wide range of uses, including bathing and other forms of water-based recreation; irrigation and other agricultural uses; and fish and wildlife habitat. We are convinced that the necessary control of pollution will yield attractive benefits from fishing and hunting recreation and many other uses.

Thank you.

MR. STEIN: Thank you very much, Mr. Gottschalk. I think you recognize from that comprehensive statement that we really lost a natural resource in Washington when Mr.

Gottschalk transferred from Washington up here. But I guess Washington's loss is New England's gain.

I did learn one thing that I didn't know before. I was really intrigued by your statement that the population of fishermen would increase more rapidly than the general population by the year 2,000. This answered a question I have always wondered about. What do the fishermen do between bites?

(Laughter.)

Do we have any comments or questions?

MR. ROGERS: I have three questions here, I believe.

Mr. Gottschalk, have you seen these average and minimum dissolved oxygen values that Mr. Pahren has presented in his statement?

MR. GOTTSCHALK: Yes.

MR. ROGERS: With specific reference to these dissolved oxygen values just above and below the state line of New Hampshire and Massachusetts, would you comment on the suitability of this river to support game fish?

MR. GOTTSCHALK: Well, the average figures are substantially below the average considered satisfactory for the maintenance of fish populations. The minimums recorded are substantially below, and the river, when they are in this condition of 1.2 to 1.5 parts per million oxygen, cannot support fish.

I would like to make this comment: Averages are misleading. Fish can't live in an average stream. They have to live in a stream as it exists from day to day. If you have low water periods during warm weather when the oxygen content drops to one and a half parts per million, the fact that it was up at five parts per million earlier in the year means nothing at all as far as those fish are concerned.

Therefore, we are concerned in fishery management with problems of minimums rather than problems of averages. I would say that in that section, as well as in the lower section, the river is not suitable for fish life much of the time.

MR. ROGERS: In your opinion then, does the pollution coming out of New Hampshire affect the fish life in the Merrimack River in Massachusetts?

MR. GOTTSCHALK: In view of the total material that Mr. Pahren submitted, anybody would be foolish to suggest that the river in Massachusetts is not in pretty terrible condition. The fact remains, however, that it is in pretty terrible condition when it leaves New Hampshire.

Massachusetts could presumably do something about the pollution of the Merrimack River if something were done about what happens to it in the State of New Hampshire. Over the years we have all, I think, come to the conclusion that a problem on a river cannot be attacked piecemeal. You have to start at the top and work down to achieve improvement.

That would be my comment on that point.

MR. ROGERS: Thank you.

MR. LaCAVA: Mr. Chairman?

MR. STEIN: Come up, Mr. LaCava. Go ahead.

MR. LaCAVA: My name is LaCava. I'm Chief Engineer for the Water Pollution Commission in New Hampshire.

Mr. Gottschalk, you made a remark about pollution coming out of the State of New Hampshire being very terrible. Would you give me the background of that remark?

MR. GOTTSCHALK: The background of that remark is information which our biologists have secured, in terms of the type of information that Mr. Pahren gave, in relation to dissolved oxygen and the BOD observations of the river. That is the background.

MR. STEIN: Are there any further comments or questions? Mr. Healy?

MR. HEALY: I would like to pursue that a little further, if I may.

You referred to data collected by fish and game authorities.

MR. GOTTSCHALK: In relation to the salmon study, that is correct, in the New Hampshire Fish and Game Department.

MR. HEALY: In terms of the pollutional effects, dissolved oxygen and --

MR. GOTTSCHALK: I reported that the New Hampshire Fish and Game Department feels that if pollution can be taken care of in the Merrimack River, it would be possible to reestablish runs of anadromous fish.

That is the primary need at the present time. There will have to be fishways. We can construct fishways, but we can't do it until the pollution has been taken care of.

MR. HEALY: Well, that is precisely the point. I have had conversations with our fish and game authorities quire recently regarding this matter, and they regard the fishways, the dams, as the most serious obstacle to reestablishment of fish runs in the Merrimack River.

Any data with reference to pollution is obtained from our Commission. The Fish and Game Department does not maintain its own laboratories as such. Except for this year, which was an extremely dry year, we have had very reasonable oxygen levels in the stream as it leaves New Hampshire into the State of Massachusetts, and we know from our own survey work in the river, that game fishes still exist in the river.

I would disagree with the general observation that you made to the effect that terrible pollution exists in New Hampshire which interferes with fish life travelling from Massachusetts up to New Hampshire.

MR. GOTTSCHALK: I assume that is a statement, rather than a question?

MR. LaCAVA: It certainly is.

MR. STEIN: Are there any further comments or questions?

(There was no response.)

MR. STEIN: While you are here, I would like to just clarify one part of the report, as I understood Mr. Pahren gave it.

As I understand it, there are two factors in getting anadromous fish up a river such as the Merrimack River, dams and pollution. Do I understand that the U. S. Fish and Wildlife Service is seriously entertaining the notion of going into a project of providing fish passage devices to get the anadromous fish back up the Merrimack River, if the pollution will not provide a block and a detriment?

MR. GOTTSCHALK: Is that a question?

MR. STEIN: That is a question. Is that a correct statement?

MR. GOTTSCHALK: No, I wouldn't say that it is. We have made a number of general studies of all of the principal streams with respect to the question of salmon restoration. At the present time, the only salmon restoration program in the United States on the east coast is in the State of Maine.

We recognize, as our reported indicated, that the opportunity for the establishment of really significant salmon populations in terms of material contribution in the commercial fisheries or really big tourist attractions in the sport fisheries is on these bigger rivers.

Now, there is a bill in Congress -- I can't cite you the name; it was introduced last year -- providing for programs of restoration of anadromous fish. It would apply to the east coast as well as to the west coast. We have reported on that bill. This is undoubtedly what you are referring to.

Until such a bill passes, we will not seriously be able to undertake the construction of fishways, but if that bill does pass Congress, then we may be in a position to proceed.

MR. STEIN: Do you consider the Merrimack River as one of the larger rivers?

MR. GOTTSCHALK: By all means, and, of course, it has a history of having produced salmon.

I personally feel that the estimate which I cited is very conservative. I think that it has a potential for producing runs of fish which might even emulate those which history has recorded as having once run in the Merrimack. Starting with the St. Croix, we actually have the Kennebec, the Penobscot, the Androscoggin, the Merrimack, the Connecticut, and finally the Hudson. Those are big future salmon streams.

MR. STEIN: Yes. The next question I want to ask is: We all recognize that the Congress has to pass legislation or appropriation bills to get something going, but I am asking you this from the technical side.

As I understand this report, there are two prerequisites to getting anadromous fish up these major rivers. One is the provision of fish passage devices where we have dams, and the other is the elimination of pollution; is that correct?

MR. GOTTSCHALK: That's correct. We have a demonstration in the Connecticut River, where it has been possible to pass the dam at Holyoke with American shad. In other words, physically it is not impossible to move a migrating stock of adult fish over a barrier, but it is useless to do this if the stream, either before you get there or after you leave that particular point, is not suitable for the existence of either the adults, the eggs or the larvae, which are much more sensitive to pollutants.

I don't know frankly, Mr. Chairman, whether it is a technical problem, which one of these is easier to solve; that is, the passage over a dam or the passage through polluted waters. Maybe it is more of a political problem, but, as far as we are concerned, we know that it is possible to put fish over a dam without too much harm. However, it is useless to do it if we haven't cleaned the water up suitably in the meantime.

MR. STEIN: Thank you very much, Mr. Gottschalk. Are there any further questions or comments?

(There was no response.)

MR. STEIN: If not, thank you.

MR. GOTTSCHALK: Certainly.

MR. ROGERS: Mr. Knox.

C. E. Knox

STATEMENT OF CHARLES E. KNOX, DISTRICT ENGINEER, WATER RESOURCES DIVISION, UNITED STATES GEOLOGICAL SERVICE

MR. KNOX: Mr. Chairman, Ladies and Gentlemen:

My name is Charles E. Knox. I am District Engineer of the Geological Survey under the Department of the Interior, with headquarters in Boston, Massachusetts.

My statement deals with the activities of the U. S. Geological Survey with particular reference to their contribution to water pollution control and abatement in the Merrimack River Basin.

The products of the U. S. Geological Survey activities which contribute to the scientific physical background for pollution control are in three general areas: Topographic maps, basic geologic maps and reports, and hydrologic reports that describe the changing quality and quantity of water as it moves through the hydrologic cycle in the atmosphere, on the ground and under the ground.

Topographic quadrangle maps are widely used and well known. The sanitary engineer looks to U. S. G. S. quadrangle maps as the source of many physical facts concerning the size, shape and scope of river systems. He also uses them to locate and record points of diversion of stream waters and return of waste waters to stream channels.

Geologic maps reveal the types of rocks and structures over which stream waters move. These maps show why some channels are watertight, where others allow movement of water between streams.

MR. STEIN: Mr. Knox, will you try to speak into the microphone a little louder? Some people are having difficulty hearing you.

MR. KNOX: Because there are many directly associated with the control of water borne pollution, I will describe products of the third general type in more detail. These are the hydrologic reports that incorporate basic data and interpretation. The reports are the end products of studies conducted in cooperation with State and municipal agencies. The U. S. Geological Survey's annual appropriation includes funds to be used exclusively for cooperation with States and municipalities in water resources investigations on a fifty-fifty basis.

As a matter of information, in Massachusetts the U. S. Geological Survey is cooperating with the following State agencies: Department of Public Works, Water Resources Commission, and the Metropolitan District Commission. In New Hampshire, the cooperation is with the Water Resources

C. E. Knox

Board.

The Corps of Engineers also furnishes funds to support a portion of the network of flow measurement stations in the stations which have particular value in flood control and water development surveys.

Water resources studies have been requested and financed by the National Park Service, the Bureau of Sport Fisheries and Wildlife. These water resources studies and the resulting reports vary greatly in scope.

The reports incorporate basic data and interpretation of the data with reference to hydrologic environment. They are published annually and are available to the public, as well as to all Federal and State agencies. Most of the reports have value in one way or another in the field of water management, including an identification control and alleviation of water borne pollution. For example, they include the continuing measurement of stream flow at 35 places within the basin, and review the quantities of water available during the critical drought periods to carry off the municipal and industrial wastes throughout the basin. Included also are measurements of low flow in many locations in the basin.

State sanitary engineers are regular users of such facts in determining the safe level of discharge of wastes into the stream.

The U. S. Geological Survey also conducts and reports on studies in the field of water quality. Both the chemical and physical quality of streams are concerned. Chemical quality measurements include the most significant of the dissolved minerals obtained from the rocks and soils over and through which water moves forward, or in the stream channel. They may also include dissolved organic and inorganic matter from domestic and industrial waste.

A limited amount of water quality data was obtained on several streams in the Merrimack River Basin as a part of the study conducted by the New England-New York Inter-Agency Committee. These data are for a base of comparison with current data to record changes in water quality that have taken place since the time of the New England-New York Inter-Agency Committee investigation.

In addition, the Department of Air Force and Army regularly forwards samples of water sources serving their installations to the U. S. Geological Survey for water quality analysis.

Physical quality studies conducted by the U. S. Geological Survey include measurement of water borne sediment, turbidity, color and temperature. No sediment studies have been made in the Merrimack River Basin, but are recommended in any comprehensive study of water pollution. Water borne sediment, as well as turbidity and temperature, bear on fish culture for recreational purposes.

The natural ground water systems in the basin are gradually being better defined. The first report by the U. S. Geological Survey was in 1903. A series of more localized ground water studies followed. The latest of these is the favorability of ground water in the Nashua-Merrimack area of New Hampshire.

To water supply engineers, these reports show the location and magnitude of bodies of fresh ground water available for public supply. To the sanitary engineer and pollution abatement authorities, they identify natural ground water reservoirs to be protected from pollution, and indicate the manner in which the discharged matter moves and may contaminate the water supply. The reports also furnish a base for more intensive water studies when required.

The growth of interest in water bodies for recreational uses and the increased attention to pollution abatement results in greater and more competitive use of water over wider areas.

State officials are in need of more than water facts for design of physical works and for administration. They desire hydrologic knowledge developed and presented with sufficient breadth to give a background for decisions involving the alternative measures for better water and land use and for over-all economic planning of basins and areas.

Certain other features of the work patterns of the U. S. Geological Survey strengthen its ability to be of service to the field of pollution control. It pursues its water resources studies with the exclusive objective of fact finding, including the facts about matter of any kind that is in water, such as gases, dissolved solids, colloidal matter, inorganic and organic, and what forces or factors influence occurrence and movement.

Through its planning and close relationship with other State officials, the U. S. Geological Survey maintains intimate knowledge of water problems and other situations for which water facts are required. This permits a concentration of scientific effort in reporting to that which is timely and appropriate.

The effectiveness of the Survey has been strengthened by the fact that its professional staff enjoy continuing and long association with the hydrologic environment and the water problems of each area.

For example, the U. S. Geological Survey scientists have long association with pollution problems. Geological Survey Water Supply Paper No. 22, on the subject of sewage irrigation, reports on the status of measures to combat stream pollution. It also includes a description of this problem in New Hampshire and Massachusetts. This report carries the date of 1899.

It may be appropriate to say, in conclusion, that the U. S. Geological Survey, when opportunity arises, is willing and eager to define and present those kinds of water facts which are most useful to the field of pollution control.

Thank you.

MR. STEIN: Thank you, Mr. Knox. Are there any comments or questions?

(There was no response.)

MR. STEIN: Thank you very much, sir.

MR. KNOX: Thank you.

MR. STEIN: At this time, I believe Mr. Taylor may have an announcement or two.

MR. TAYLOR: Mr. Chairman, there are a number of Senators and Representatives of the State and General Court of the State of Massachusetts who wish to be recorded in this matter, but not to make statements. I have been told by the Chairman that he will accept people, Senators and Representatives of the General Court, who would like to be recorded but not speak at any length at this time.

Representative Kenefick.

STATEMENT OF ARCHIE E. KENEFICK, STATE REPRESENTATIVE, LOWELL, MASSACHUSETTS

MR. KENEFICK: Mr. Chairman, Conferees, Ladies and Gentlemen:

I am Representative Archie Kenefick of the 14th District, Lowell, Massachusetts, and also a member of Public Health in the State House.

I just want to be very brief and say that I believe very much in favor of the statement that the Honorable Torbert MacDonald made here this morning through one of his representatives.

All I wish to add to that would be that I want to raise the quality of the water in the Merrimack Valley and to all the communities which it serves, but I want to know and would like to know how we are going to raise the money to raise this quality of the water?

The people in my district want to clean the Merrimack River out. They believe in the pollution being cleaned out, but they are saddled now with heavy taxes, and I know that they cannot pay the tax for this problem. That is all it amounts to. It is a money problem.

Thank you, Mr. Chairman, and members of the conference.

MR. STEIN: Thank you, Representative Kenefick.

MR. TAYLOR: Senator Rurak.

STATEMENT OF SENATOR JAMES P. RURAK, MERRIMACK RIVER POLLUTION COMMISSION, HAVERHILL, MASSACHUSETTS

MR. RURAK: Mr. Chairman and members of this very distinguished conferee committee, members of my own Commission on Pollution in the Merrimack River, Ladies and Gentlemen:

At the outset, I do want to thank this conferee committee for allowing me to say a few words.

I do want to make this crystal clear. I am not speaking for other commissions. I am not speaking in opposition. I am speaking as a member of the commission on some of the opinions expressed at various meetings that we have held in these cities and towns during the past year.

I do want to point out that many of these questions that have been asked -- and, certainly, if I do make erroneous statements, I am sure that the commission is here and

I wish they would certainly correct me.

First of all, I think we had one of our first meetings about a year ago. At that time I did get up at this meeting, and I pointed out to this commission that we are going to have some very, very serious problems with our up-river communities, mainly because -- not that they were against pollution, but because of this prohibitive cost that was going to be assessed to these cities and towns.

This I want to make crystal clear. I know that the river is polluted. This we all know, but the question always came, and I have said this once if I have said it a hundred times, that it does have to be an interstate problem, and that the Federal Government will have to come into this project. We have already filed a bill with one of the members, the very distinguished representative and my colleague from Newburyport, to ask for assistance, 20 per cent from the Commonwealth of Massachusetts, in trying to aid these cities and towns with this problem.

I want to commend and compliment Mr. Taylor, Joe Knox, Mr. Rogers and Joe Lawler from Camp, Dresser & McKee. Certainly, they were very, very fair with the questions that were asked at these town halls, city halls and wherever these meetings were held.

One of the questions that was asked was: How much has the river cleaned itself up to the present time? The answer was: It has cleaned itself up 70 per cent.

Another question came up, that they are fishing off the bridges a lot further up the area than in many, many years. Could they give the answer of why these fish are coming up this river up in this area? And, by their own admission, by the Commission's own admission, they did state that the water was cleaning itself up. Why? Because the plants, these mills from Lawrence and Lowell had moved down to the southern part of the country.

These are some of the questions that were asked. Many others were asked, and I know that a poll was taken. One of the senators here will possibly bring that up, but a poll was taken in many of the cities and towns. I may be wrong, but I think it was taken in 47 or 48 cities and towns, and at that time the opposition was two to one or three to one in many of these cities and towns.

Many, many questions were asked of how much this has raised the tax rate in our cities and towns. The cost is going to be approximately $142,000,000. Already Newburyport has started this project with Federal help, and I think they have matched plans through their very, very aggressive, my colleague, representative, Representative Zabriskie down in Newburyport.

J. P. Kurak

Certainly, I have asked him this question many times. I have asked his Honor, the Mayor, and many people in the area, that would they expect my cities and towns that I represent in the up-river communities to more or less take this cost on their own. Their honest answer was "No." They felt that the Federal Government should come in and help, like it helped its own City of Newburyport.

I do want to point out that in the City of Haverhill, and I state again, the cost is approximately $36,000,000. This is the cost. This is the over-all cost, and this isn't the hidden cost, such as manufacturers possibly having to probably move their sewerage systems and an extra cost to home owners.

Correct me, Joe, if I am wrong, but I know I asked you this question, Joe Lawler who is here, that this is an extra burden on the cities and towns.

I do want to say that many of the selectmen, the mayors, the town officials, have expressed opposition, not because they don't want this river clean, but because of this prohibitive cost. Again we come to that question.

Certainly, I want to say this: I am not a magician. I hope I could look into a crystal ball for this answer which I don't know. That is why I am a member of this Commission, and I guess that is why this Commission is here today. Where are we going to get this money?

I have often stated that we should let our Congressment, let our United States Senators know this problem that we are confronted with in this Merrimack River Valley.

So, again I say that unless the Federal Government this is my own very humble opinion -- comes into the picture with some type of a formula, possibly such as on the interstate highways, 90/10, 75/25 or 50/50, regardless of what type of a formula, this is the only way that these cities and towns will be able to take up this project.

Thank you very, very much.

MR. STEIN: Thank you, Senator. Are there any comments or questions?

(There was no response.)

MR. STEIN: If not, as previously announced, we will recess for lunch until 1:30.

(Whereupon, a luncheon recess was taken.)

AFTERNOON SESSION

MR. STEIN: May we convene?

Mr. Rogers?

MR. ROGERS: I just want to continue with the Federal Government's presentation. I have about five minutes more.

The Department of the Air Force has two sizeable installations in this Merrimack River Basin. One is Hanscom Field at Bedford, Massachusetts, and the other is Grenier Field at Manchester, New Hampshire.

We have, representing Hanscom Field, Captain Myrl E. Wilson, who is the Bioenvironmental Engineer. I am not sure that Mr. Bilodeau from Grenier Field is here.

MR. PALAZZI: He is here.

MR. BILODEAU: Yes.

MR. ROGERS: Mr. Bilodeau is Base Civil Engineer at Grenier Field at Manchester, New Hampshire.

I would just for the record like to read this letter from the Department of the Air Force, Headquarters, United States Air Force, Washington, D. C. The subject is "Conference on Water Pollution," and it is addressed to "Department of Health, Education, and Welfare, Attention Alfred E. Peloquin, Chief/ Water Quality Section, Regional Office, Region I, 120

Boylston Street, Boston, Massachusetts." The letter reads as follows:

> "1. Reference your letter 17 January 1964 pertaining to a conference on water pollution to be held on 11 February 1964 in Boston, Massachusetts.
>
> "2. The USAF Medical Service has an active role in maintaining routine surveillance over waste disposal practices at Air Force installations. Bioenvironmental Engineers of the Medical Service work closely with the USAF Civil Engineers in order to provide advice and assistance on the health aspects of water pollution control. In addition, comprehensive surveys are being conducted by the USAF in conjunction with the USPHS and local health departments to evaluate the extent of water pollution and to plan necessary abatement procedures.
>
> "3. It is desired that Captain Myrl E. Wilson, Bioenvironmental Engineer, 3245 USAF Dispensary, L. G. Hanscom Field, Bedford, Massachusetts, attend this conference as an Air Force representative; however, he has no presentation to be made."

There is one question I would like to ask Captain Wilson. I believe at the moment all of the Nanscom Field waste goes into the M.P.C. system, except for a small part?

CAPTAIN WILSON: That is correct, a very small part, which originates in the motor pool and the hangar area, which is conducted to the separator. This is not more than 7,000 gallons pèr day.

MR. ROGERS: All right, sir, fine. Thank you, Captain Wilson.

With reference to Grenier Field, we have Mr. Bilodeau here. Mr. Bilodeau, if you would, would you tell us about your plans to handle the waste problem?

MR. STEIN: Would you come up here, Mr. Bilodeau, so that those in the back will be able to hear you?

MR. BILODEAU: Yes.

STATEMENT OF MAURICE E. BILODEAU,
BASE CIVIL ENGINEER, GRENIER FIELD,
MANCHESTER, NEW HAMPSHIRE

MR. BILODEAU: As far back as 1958, Grenier Field has programmed for a sewage treatment plant to take care of a half million gallons of sewage disposal per day. This was brought about by the passage of a law in the State of New Hampshire for water pollution control.

As of now, the item is still in the military construction program, and no funds have been allocated for the construction of this plant, due to the fact that a curtailment of funds throughout all Air Force installations has come due this year, and Grenier Field presently is under consideration for closing.

However, even though this is in the process, the item has remained in the program, and if we stay there I am sure that the Government will probably take cognizance of this fact and construct a sewage treatment plant.

This is all I have to say.

MR. STEIN: In other words, you have no plans for constructing now, and no authorization to construct?

MR. BILODEAU: No authorization for the construction presently.

MR. STEIN: Are you definitely phasing out?

MR. BILODEAU: This is what Secretary McNamara says. I hope not.

MR. STEIN: In Federal installation programs, this is one of our most difficult ones, and this is indigenous to the whole continental and overseas programs. There is a statute which provides that the Federal installations are to show the lead in waste treatment practices and facilities.

The problem we run into is when the Department of Defense announces that it is phasing out, which is the current bureaucratic phrase, an installation. That means closing it down over a period of time, over the protests of those who do not want it to close.

The difficulty, as you can well imagine, is that sometimes this phasing out takes a long period of time, and sometimes, as it is taking a long period of time, they change their minds and the installation remains open. This does provide one of our most difficult problem areas, because if you go to the Congress and ask them to appropriate money for an expensive waste treatment installation which may take several years to plan and construct, the notion is that by the time you get it planned and constructed, if we give you the money, the base will be closed. So they ask, "What is the point in doing this?" And then everyone accedes to that view, but in four or five years you come back and you find the base is still in operation.

I think the only way you can arrive at an answer to that is for the people of the locality and the State and the Federal Government, all who are interested in clean water, to follow these things very, very closely, because, despite what you may think, some of these installations do close, and I think the judgment is correct that it would have been probably a waste of money to put in the waste treatment facilities.

Again, due to various pressures, some of them do not close. I guess the kind of judgment you make as to which are going to close and which are not going to close is a very specialized one and subjective one.

Again, I ask you in the area to try to look at this as objectively as possible. We recognize that anyone in any area is always pulling for the military installation in that area not to close, but, as I say, some of them do close.

This is one of our most vexing problems. We really need the assistance of all groups to determine what is an equitable way to handle it.

Thank you.

MR. ROGERS: Do your conferees want to ask any questions?

MR. STEIN: Are there any comments or questions?

(There was no response.)

MR. ROGERS: Thank you, Mr. Bilodeau.

We have six other Federal agencies here, but none of these wish to make statements. I would like for the conferees to know who is here, if they would like to ask them any questions.

The United States Department of Agriculture, represented by Mr. Alvin C. Watson, River Basin Representative. Mr. Watson is back here.

Housing and Home Finance Agency, by Mr. Vincent Liberto, who is over here.

Corps of Engineers, New England Division, is represented by Mr. Edward L. Hill and Mr. Joseph L. Ignazio. They are over at the side.

First Naval District, Mr. Earle S. King, who is back here. He is Sanitary Engineer of the District Public Works Office.

First Coast Guard District, Commander Harry E. Haff, Jr. I believe the Commander was here earlier, and he has left.

Area Redevelopment Administration, Mr. Thomas Markham. Is Mr. Markham here?

(There was no response.)

MR. ROGERS: None of those have statements.

This concludes the Federal Government's presentation.

MR. STEIN: Thank you. Are there any comments or questions on the Federal Government's presentation at this time?

(There was no response.)

MR. STEIN: If not, we will now turn to the New England Interstate Water Pollution Control Commission, Mr. Joseph C. Knox.

STATEMENT OF JOSEPH C. KNOX, CONFEREE AND EXECUTIVE SECRETARY, NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION

MR. KNOX: Mr. Chairman, it is now my pleasure to present a statement on behalf of the New England Interstate Water Pollution Control Commission. For purposes of the record, I would like to have it stated that from New Hampshire we have Commissioners John Palazzi, William A. Healy and Walter G. White. From Massachusetts we have here today James F. Bowdren and William J. Ferreira.

The New England Interstate Water Pollution Control Compact is the legal instrument for cooperation between the States in interstate water pollution control in a region which is virtually a network of rivers crossing and recrossing State lines. Approved by an Act of Congress in 1947 and subsequently ratified by the New England States and New York State, it provides the necessary mechanism for resolving interstate water pollution problems.

The Company is administered by the New England Interstate Water Pollution Control Commission which is composed of five members from each signatory State. An important part of the Commission organization is its Technical Advisory Board composed of the directors of the State water pollution control agencies. The Board carries out the technical phases of the program and prepares recommendations for Commission consideration and action.

Recognizing the necessity of a balanced use of the area's waters to meet the various degrees of water quality required for the proper maintenance of the social and economic well-being of the region, the Compact sets up a procedure for classifying interstate waters according to highest use. This classification system is based on accepted water quality standards, and reconciles the conflict of water uses by the assignment of use classifications which will best serve all interests concerned.

Under the terms of the Company, each signatory State agrees to prepare classifications of its interstate waters according to present condition and proposed highest use and to submit them to the Commission for approval. After approval by the Commission, the States involved are pledged under the terms of the Compact to establish programs of treatment of sewage and industrial wastes to bring about the improvements required to meet the approved classification. The Commission has no authority to issue orders for pollution abatement. Such powers are retained by the individual States and used when needed to enforce classification requirements.

To coordinate and facilitate the preparation of proposed interstate water classifications by the States, subcommittees of the Technical Advisory Board have been established by the Commission for each of the interstate river basins and tidal areas. Each subcommittee is composed of the Board members from the States included in the basin or area. Coordinated sampling programs and sanitary and industrial waste surveys are arranged by each subcommittee to procure the necessary data for classification preparation. The proposed classifications are discussed at public and group meetings before being submitted to the Commission for approval.

The Commission is represented here today pursuant to a notice under date of September 23, 1963 from Anthony J. Celebrezze, Secretary of Health, Education, and Welfare, calling a conference relative to pollution of the waters in the Merrimack River Valley in New Hampshire and Massachusetts, as the first step in enforcement procedures under Section 8 of the Federal Water Pollution Control Act. The notice states that the conference is called on the basis of a written request by Governor Peabody of Massachusetts and also on the basis of reports, surveys and studies, which give Secretary Celebrezze reason to believe that pollution is endangering the health or welfare of persons in a State other than the one in which the discharge or discharges originate. The conference is to cover the interstate waters of the Merrimack River, the Nashua River and their tributaries (Massachusetts - New Hampshire) and the intrastate portions of these rivers within the Commonwealth of Massachusetts.

The primary interest of the Commission in these proceedings relates to the interstate aspects of the pollution control problem in the Merrimack River Valley. The Merrimack River has six interstate tributaries: Beaver Brook, Spicket River, Little River and Powow River flowing from New Hampshire into Massachusetts; and the Nashua River and Salmon Brook, which flow from Massachusetts into New Hampshire. The following information is from the files of the Commission:

Beaver Brook - B classification at State line approved in 1957. Pollution abatement program completed in New Hampshire.

Spicket River - B classification at State line approved in 1959. New Hampshire pollution abatement program to be completed in 1964.

Little River - Scheduled for B classification approval in 1965. Classification Subcommittee established in 1959. There are no municipal or industrial sources of pollution in New Hampshire.

J. S. Knox

Powow River - Scheduled for B classification approval in 1965. Classification Subcommittee established in 1959. There are no municipal or industrial sources of pollution in New Hampshire.

Salmon Brook - B classification approved in 1955. Sources of pollution abated.

Nashua River - Scheduled for classification approval in 1965. Classification Subcommittee established in 1959. Preclassification studies conducted by Massachusetts and New Hampshire pollution control agencies in cooperation with the Massachusetts mill officials and the National Council for Stream Improvement (of the Pulp, Paper and Paperboard Industries).

In 1959 a subcommittee to coordinate classification studies on the main stem of the Merrimack River was established. New Hampshire and Massachusetts have informally agreed on a C classification at the State line. Massachusetts will request classification approval in 1964 and New Hampshire in 1971. This variance in dates of classification is due to the relative magnitudes and costs of the needed treatment facilities, anticipated allotments for Federal construction grants and their commitment to other drainage basins. It is anticipated, however, that completion of the abatement programs in both States will occur at approximately the same time.

The States of New Hampshire and Massachusetts have effective water pollution control laws and agencies, dedicated to an orderly and comprehensive interstate program, carried out within the framework of the Compact. Pollution control in the Merrimack Valley is not an interstate problem necessitating enforcement action on the part of the Secretary of Health, Education, and Welfare. New Hampshire and Massachusetts are in complete agreement relative to water quality standards and the program for their attainment on the Nashua and Merrimack Rivers at the State lines. And yet the entire report of the Department of Health, Education, and Welfare is an attempt to prove that pollution occurring in one State is endangering the health and welfare of persons in another, as the basis for enforcement action against the upstream State. The real problem concerns the waters of the main stem of the Merrimack River within the confines of the Commonwealth of Massachusetts - an intrastate pollution situation which has existed for over half a century and which we can only conclude was Governor Peabody's reason for requesting this conference today. The Massachusetts problem has been studied and restudied, corrective action postponed and repostponed, just because of "plain old economics." It costs money to construct municipal sewage works -- we are talking

$40 million for the communities on the main stem of the Merrimack River in New Hampshire and $140 million for those in Massachusetts. To aid communities in financing the construction of sewage projects, Congress has provided grants-in-aid. The programs of the States have been accelerated in most instances by these grants, as intended, but the funds appropriated for the purpose are limited, making it necessary for the States to exercise considerable discretion in their allocation. This has resulted in the establishment of priorities for such grants in order that the funds may be expended in those river basins where the greatest good can be accomplished in reclaiming waters for their most beneficial use. In other words, there is not sufficient grant money being appropriated by Congress, and the States must schedule their pollution abatement programs in accordance with the funds provided. Thus it can be fairly stated that the Federal Government, through its construction grants, is setting the pace of the "clean up" program, for experience conclusively demonstrates that communities will not proceed without the benefit of financial assistance, and we cannot reasonably expect them to.

We certainly trust that this conference will not lead to further studies and investigations. As the records show, we have passed that phase of the program in the New

England area and are now in the actual construction stage. Too often have we seen remedial action deferred for further study -- a favorite delaying tactic employed where large expenditures are involved or as a political expedient.

This statement of the New England Interstate Water Pollution Control Commission can be summarized as follows:

1. We do not have an interstate pollution problem requiring Federal enforcement action on either the Nashua River or the Merrimack River.

2. There is an intrastate pollution problem of long standing in the Merrimack Valley in Massachusetts. It has serious financial complications.

3. Additional Federal financial assistance is necessary if the Merrimack River pollution abatement programs in New Hampshire and Massachusetts are to be accelerated to any extent. Legislation for State aid, similar to that provided by New Hampshire, would help in Massachusetts.

4. Studies and investigations of the pollution problem throughout the Merrimack River Basin have been conducted. Construction of treatment facilities is dependent upon the availability of financial aid.

5. Money is the critical need -- not enforcement.

Thank you very much.

MR. STEIN: Thank you, Mr. Knox. Are there any comments or questions?

MR. ROGERS: Yes. I have one question here, Mr. Knox. You mentioned that the State program is geared to financial assistance from the Federal Government.

Just pointing out that the present law for Federal financial assistance ends on July 1st, 1966, if this is not continued, does that mean that the abatement program would stop in these two states?

MR. KNOX: That is something we cannot help, but I think we have some idea that both New Hampshire and Massachusetts will present their programs and the relative costs involved.

MR. ROGERS: That's all.

MR. STEIN: Are there any further questions?

(There was no response.)

MR. STEIN: Mr. Knox, I will say that I have never heard of one interstate pollution problem from you that the Federal Government should sit in on.

MR. KNOX: That is the way we feel about it.

MR. STEIN: I know you do.

Now, you have some very interesting comments. You say it is not an interstate problem necessitating enforcement action on the part of the Secretary of Health, Education, and Welfare.

This is the third conference we have had in New England, the Androscoggin, the Connecticut and this one, and in no case was there an interstate pollution problem.

MR. KNOX: I think in every case, Mr. Chairman, if I may, that we have demonstrated to you conclusively that we have very fine programs for pollution abatement in operation throughout the entire New England area.

As I personally look upon the Federal Water Pollution Control Act, it means to me that the Federal Government is only to be called upon for enforcement action in case a State is unable or unwilling to make a community or an industry comply in the construction of needed pollution abatement facilities.

MR. STEIN: Mr. Knox, you have said that many times to our Secretary, Assistant Secretary and to Congress, but the Federal Act does not reflect that, and the Secretary or, at least, the Assistant Secretary has explained to you many times what our Act says.

We do have an obligation, when the Secretary believes there is interstate pollution, to start enforcement action.

I am just looking at the map. The Merrimack River and the Nashua seem to be relatively close to Massachusetts. Here you are talking about $40,000,000 for communities on the main stem of the Merrimack River in New Hampshire to clean that up, and somehow, magically, that doesn't get down to Massachusetts and it is not an interstate problem.

It seems passingly strange that $40,000,000 would be required to correct pollution just in New Hampshire. Our report indicates and it certainly doesn't state that all the pollution is interstate coming from New Hampshire. For example, on the bacterial load, 32 per cent is discharged from New Hampshire, and 68 per cent in Massachusetts. I guess there is enough credit for both sides.

MR. KNOX: The only thing I can say, and I think you should bear this in mind when you are referring to the pollution coming from New Hampshire into Massachusetts, is that the City of Lowell, Massachusetts, has seen fit to install a water treatment plant and take its domestic source of water right from the Merrimack River.

Further, in that same section which you are talking about, how badly water has deteriorated, and so forth, the City of Lowell has maintained for many, many years a public bathing place in that section of the river.

I am not arguing the point whether or not the Merrimack River is polluted. We know the Merrimack River is polluted. What I am trying to bring out is that we do have programs and we are working on this problem here, and we are going to see that the rivers are cleaned up.

MR. STEIN: Yes. There is just one more comment that I have to make, and this is one that kind of puzzles me.

In Mr. Knox's statement, it says:

"The real problem concerns the waters of the main stem of the Merrimack River within the confines of the Commonwealth of Massachusetts -- an intrastate pollution situation which has existed for over half a century and which we can only conclude was Governor Peabody's reason for requesting this conference today."

Probably most of you are acquainted with Governor Peabody. He is a distinguished citizen, a Harvard man, an excellent football player, and a graduate of the Harvard School of Law. In his letter to the Secretary, he said:

> "It is further requested that the conference include the tributaries of these rivers with reference to pollution affecting both the interstate reaches of these waters and the intrastate, within the State of Massachusetts."

Now, I don't know, after reading that, how we can arrive at the conclusion that Governer Peabody was just talking about the intrastate reaches.

MR. KNOX: I think it was Governor Peabody's intention, and I think he was concerned that he had a problem here within the confines of the Commonwealth, and I am talking about the section in Massachusetts -- Lowell, Lawrence, Haverhill and the rest of the municipalities all the way down.

As you probably know, I have been involved in this water pollution control business for a good many years. I have been actively engaged in all the investigations from 1923 on in connection with the Merrimack River pollution problem, and I have always considered that there was a real problem in the Massachusetts section of the river.

Later on, you are going to hear testimony from New Hampshire on what New Hampshire's program is, what the City of Nashua is doing, and so forth, and the programs that have been going on with Massachusetts in connection with our review.

That is all I am trying to bring out, that we have real problems here, and so forth. I do not want at this time to get into any discussion of Governor Peabody. I just made that remark because I know the Governor. I know that he is vitally concerned with the Massachusetts section of the Merrimack River and he wants to see that cleaned up. And, after forty years, I personally want to see that cleaned up.

I have been spending the last few months, or maybe the last year, shall we say, and I have met with this special

Commission up in the Merrimack River Valley, oh, every two or three weeks, and discussed this thing.

MR. STEIN: Mr. Knox, I think I know the Governor too, and I know the Governor comes from the cradle of precise English -- from Emerson, Thoreau, Lowell -- and English means what he says it means, and when he says "interstate as well as intrastate," I think the Governor is a precisionist as a lawyer in the use of English, and I think I can understand him.

MR. KNOX: My only comment with regard to that is that subsequent to the writing of that letter, Governor Peabody wrote a letter to Secretary Celebrezze in which he asked or requested that this conference be confined to the intrastate portions of the Merrimack River within the Commonwealth of Massachusetts.

MR. STEIN: I didn't read the letter that way. That letter said he would have no objection if it were so confined, but he didn't ask that it be so confined. If you don't see a difference --

MR. KNOX: I'm not trying to get into any argument with you on this. I mean, I don't think it is important enough. I have stated my case here today. I have been asked to give a statement. I have given it.

Those are my thoughts. These are the opinions of my Commission, and I think I have given a very excellent presentation of what is going on in water pollution control in the New England area.

(Applause.)

MR. STEIN: I would agree too that he has given a very excellent presentation, just so it won't be considered a self-serving statement.

May we go on to the next and call on New Hampshire?

Mr. Palazzi.

STATEMENT OF JOHN PALAZZI, CONFEREE, AND CHAIRMAN, NEW HAMPSHIRE WATER POLLUTION COMMISSION

MR. PALAZZI: Mr. Chairman, Conferees, Ladies and Gentlemen:

My name is John Palazzi. I am Chairman of the New Hampshire Water Pollution Commission and I am taking this opportunity to present a brief statement outlining the Commission's position with regard to pollution control in the Merrimack-Nashua River Basins.

Although we do not concede that pollution arising in New Hampshire endangers health or welfare in Massachusetts, I can say that we fully agree that the Merrimack and many of its tributaries are polluted. This, of course, has become well recognized and understood by the public as a result of the many studies and public pronouncements which have been made concerning the condition of the stream over the years. Perhaps we have been remiss to some extent, however, because not so much notice has been given to the fact that New Hampshire communities have been doing something toward improving these waters in recent years.

A short time ago, for instance, the City of Nashua

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finished a central treatment plant to relieve pollution of the river, and is now busily engaged in a program of interceptor sewers to serve various areas within the community. It is also in the process of constructing a lagoon disposal system to improve the Nashua River. Up to this time the city has invested approximately $2,500,000 and has given evidence of being willing to continue these efforts to abate pollution. Earlier, in 1957, the Town of Derry spent $1,300,000 for a system of interceptor sewers and lagoon facilities so as to eliminate pollution of Beaver Brook, an interstate tributary to the Merrimack, which flows across the state line at Dracut, Massachusetts. Right at this moment the Town of Salem is engaged in the first of three projects ultimately costing about $3,500,000 in order to clean up the Spicket River, also an interstate tributary, which leaves New Hampshire above Methuen, Massachusetts. Others which have constructed disposal plants include the Town of Goffstown along the Piscataquog River, a tributary to the Merrimack at Manchester, and Hillsborough County which is now operating a treatment works to serve the county buildings and hospital situated in Grasmere along the Piscataquog River. Several of the remaining municipalities up and down the Merrimack are proceeding with engineering investigations of their pollution control requirements. Among these can be mentioned the cities of Manchester, Concord, Franklin, and the towns of Allenstown, Hooksett, Merrimack and Pembroke. The Town of Hudson has authorized a study and Milford is very likely to proceed in 1964. The only other community within the New Hampshire portion of the watershed included in the Federal report (dated February 1964) is the Town of Wilton, and we do not anticipate any difficulty in persuading its officials to proceed with a planning project at an appropriate date. Laconia and Meredith have spent millions of dollars to clean up their waters which flow into the Merrimack.

From the foregoing, I think it is fair to say that a substantial amount of progress is taking place, especially in the lower sections of the basin, which is naturally of greater significance to the State of Massachusetts in so far as water quality is concerned.

Turning to the subject of stream classifications in the Merrimack Valley and the construction schedule required to meet the control program, I will mention for the record that the Commission intends to proceed with classification of all remaining unclassified tributaries by 1969, and will submit classification recommendations to the Legislature for the main stream in 1971.

Basically, there are two reasons why this timing

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arrangement was adopted by the Commission. First, you will recall that we are committed to a classification program for the Androscoggin River tributaries in 1965 and in the main stream in 1967. Thus, a considerable amount of staff activities will be directed to this area for the next few years. Secondly, and probably the more important factor, is the availability of grant funds. For the next few years most of our Federal and State financial assistance will have to be channelled to communities in the seacoast area, such as Portsmouth, Dover, Rochester, Somersworth, Exeter, et cetera., in order to complete the program jointly undertaken in 1961 by the States of Maine and New Hampshire through the New England Interstate Water Pollution Control Commission to improve the waters of the Piscataqua - Great Bay Region. Immediately thereafter, financial assistance will have to be extended to New Hampshire municipalities in the Androscoggin River Basin. With these obligations facing the State, it is quite apparent that little or no grant money can be diverted to the Merrimack River communities any time earlier than 1971. Accordingly, it is logical to schedule the stream for classification on or about that date.

With regard to the construction schedule which might be feasible in the New Hampshire section of the Merrimack River and its tributaries, we cannot predict with any degree of precision which sections of the stream will be improved in the initial stages and those which will follow later. This will depend largely on the cost of the various projects required as compared to grant funds available and the financial ability of particular municipalities to proceed at a specified time. In any event, present information indicates that the overall cost for pollution control in this watershed will approach the sum of $40,000,000. On this basis, since communities have been conditioned to receiving their full share of Federal and State assistance -- and, by the way, in New Hampshire, the communities are now getting 30 per cent as assistance -- we believe it reasonable to project a minimum period of twelve years as being needed in order to complete the classification compliance program.

As to the mechanics for arriving at this objective, I would point out that once classification has been enacted by the Legislature, it then becomes mandatory for the Commission to issue orders to the municipalities and industries affected requiring appropriate measures on their part to comply. We have at our disposal the matter of time, and for several years it has been Commission policy to issue all orders on the basis of a two-year compliance period. If at the end of the two years adequate progress is being made, the Commission for good cause shown has been willing to extend additional time. It is in this very manner that we would propose to pursue a compliance program for the Merrimack and its tributaries.

Admittedly, the twelve-year construction period mentioned earlier, together with the 1971 classification date, means several years will elapse before the desired end results will be obtained. However, there can be no other choice unless the Federal Government somehow expands its grant program so as to speed up the overall abatement effort. In New Hampshire, we are geared to do whatever the Federal Government does by way of financial assistance, and State funds will have to be increased proportionately in accordance with whatever the Congress might decide to do in this area.

Personally, Mr. Chairman, I would like nothing better than to be able to press a button and see the pollution situation cleaned up immediately, but this we know is an impossibility. Our cities, towns, and industries, are all faced with heavy financial obligations, and we must use all reasonable means at our disposal to aid them in solving their pollution problems. As stated before, the key to solving the pollution problem is money, and we might as well face the fact that the speed of the abatement program can be no greater than the present rate unless additional funds are appropriated.

I would like to conclude by saying that the New Hampshire Commission is working closely with counterpart officials in the Commonwealth of Massachusetts and the New England Interstate Water Pollution Control Commission in developing coordinated plans for an adequate pollution control program in this watershed.

Further, I want to assure you of our sincere intention of taking all steps possible to reach the desired objective of cleaner waters in the Merrimack - Nashua River Basins. There is every indication that State and Interstate agencies responsible are capable of solving the pollution problem affecting the Merrimack and Nashua Rivers. In our opinion, these agencies are capable of carrying out the control plan without any need for the Federal Government attempting to exercise any jurisdiction in this matter beyond continued financial and technical assistance.

MR. STEIN: Thank you, Mr. Palazzi, for a very comprehensive, concise and clear statement of New Hampshire's position.

Do we have any comments or questions?

MR. ROGERS: I have one. Mr. Palazzi, on this time schedule, you are talking about 1971 on classification, and then twelve years from then for construction. This means completion of construction about 1983?

MR. PALAZZI: That's right. It would be twelve years.

MR. ROGERS: From the classification?

MR. PALAZZI: Yes. With our programs in the Androscoggin and the Piscataqua, we see no other alternative.

MR. STEIN: I just have a couple of information questions.

You say you have a 30 per cent grant. What would happen if the Federal Government increased its grant? Could you increase your grant and put money in from the State to match?

MR. PALAZZI: If the Federal Government increases their total volume -- you mean to each community?

MR. STEIN: No.

MR. PALAZZI: We could not increase up to 40 per cent.

MR. STEIN: No, I am not suggesting that. Supposing the total amount available were put in and more communities could get grants, would New Hampshire keep pace and match all of them?

MR. PALAZZI: I am sure they could. I am sure they would. We have discussed this with Governor King of New Hampshire, and he assures us he will do everything in his power to meet these.

MR. STEIN: Do you have any areas eligible in New Hampshire for the accelerated works program?

MR. HEALY: Have we any --

MR. STEIN: Have you any areas?

MR. HEALY: We have three counties in New Hampshire eligible for Federal Government assistance.

MR. STEIN: Supposing they get a 50 per cent Federal grant or more, do they get a State grant in addition?

MR. HEALY: Yes.

MR. STEIN: How much is the State grant?

MR. HEALY: 30 per cent.

MR. STEIN: You don't have any 75 per cent communities in New Hampshire?

MR. HEALY: No.

MR. STEIN: I didn't think so. Thank you.

MR. CARNEY: Mr. Chairman, pardon me, please. I must leave for an important conference in Lowell, and I would like to say a word.

MR. STEIN: Are you from Massachusetts?

MR. CARNEY: I am a City Councilor from Lowell. I must leave for an important meeting at four o'clock, and this is the time to make it.

MR. STEIN: All right. Just one moment, sir. Have you completed?

MR. HEALY: No, we are not.

MR. TAYLOR: If he just wants to say he is in favor of something --

MR. CARNEY: I will only speak a moment. I won't read eight or nine pages.

MR. STEIN: Mr. Taylor has indicated that if it is a short recitation, all right.

MR. CARNEY: A couple of minutes.

MR. STEIN: All right.

STATEMENT OF JOHN F. CARNEY, CITY COUNCILOR, LOWELL, MASSACHUSETTS

MR. CARNEY: I will speak from where I am. I am John F. Carney, City Councilor, City of Lowell.

Gentlemen, I have been very much impressed with all the data and statistics, and no one would be any happier than I if he could clean up the Merrimack River, but I want to state Lowell's position.

I am going out on an important council meeting. We are fighting a $94 tax rate. It is liable to go up to $100.

Now, at the meeting in Lowell, Mr. Taylor said that our share of this would be $30,000,000. The only way Lowell can tackle a proposition of this kind is similar to the urban renewal now going on in Lowell, a $7,000,000 project. The Federal Government supplies 75 per cent, the State one-eighth, and the City of Lowell one-eighth. This is the only way we can tackle $30,000,000 propositions.

Now, as one of the gentlemen stated, we have a municipal park house, and as a kid I swan there across the river every day. I am 56 years old. I don't know whether the bacteria killed me, or I killed the bacteria, but I'm pretty healthy today.

Now, no one would be any happier than I, as I say, if you can clean up the Merrimack. We are now drinking water out of it.

The same Mr. Taylor recommended that it was a source of water supply. Now he is telling me how dirty it is. I am still quite unconvinced that our own well water wasn't the best system, but, nevertheless, gentlemen, as I said, I have got to go to an important city council meeting. I was here from 9:30. I didn't want to go without having a chance to represent myself.

Our City Solicitor, a very capable representative, Cornelius Finnegan, will speak later.

Thank you for your kind attention. Thank you, Mr. Chairman, for your courtesy.

MR. STEIN: Thank you, sir, for your statement. As far as I know, Mr. Taylor hasn't said anything about the river yet.

MR. CARNEY: Listen, I'm for it if the Federal Government can come up with 75 per cent of the money. Otherwise, Lowell's end of $30,000,000 is -- well, it's one of those dreams like a fantasy.

MR. STEIN: May we have the spelling of your name for the record, sir?

MR. CARNEY: John F. C-a-r-n-e-y, City Councilor, Lowell, Massachusetts. Also an ex-football player.

MR. STEIN: Mr. Palazzi?

MR. PALAZZI: Yes, sir.

MR. STEIN: Do you have any more statements from New Hampshire?

MR. PALAZZI: Mr. White, would you like to add anything for New Hampshire?

MR. WHITE: No.

MR. STEIN: Would you fully identify Mr. White for the record, please?

MR. PALAZZI: Mr. Walter White is one of our Commissioners from New Hampshire.

MR. STEIN: Mr. Healy?

MR. HEALY: I have no formal statement to make, Mr. Chairman, but we do have Mayor Vagge, Mayor of the City of Nashua, present, and he wishes to make a statement and we have agreed to it. He also is accompanied by Mr. Joel Hill, City Engineer. I don't know whether Mr. Hill intends to make a statement, but we would like to have Mayor Vagge speak at this time.

STATEMENT OF HON. MARIO J. VAGGE,
MAYOR, CITY OF NASHUA, NEW HAMPSHIRE

MAYOR VAGGE: My name is Mario J. Vagge, Mayor of Nashua, New Hampshire.

Mr. Chairman, Conferees:

First, may I say that this is Boy Scout week, and we have a man that takes over as Mayor for the day and also as Engineer for the day. I would like to have them stand and take a bow.

(Applause.)

Each year in our city, we do that, and these fellows take over. Of course, because of the fact that we couldn't be in Nashua today, I thought they would come down here and get a pretty good experience. They will have to make a complete report tonight to the young businessmen, so they've got a chore on their hands.

M. J. Vagge

I have been listening to all this pollution situation here, and I will say this to you: I think the Federal Government should listen when we say we need assistance. Nashua is a community of 40,000 population, and I doubt if there is another community in the whole of New England that is growing as fast as Nashua. We are building on the average of 400 new homes a year. We also have new industry that is coming into Nashua.

We realize that it taxes the Nashua River, and also the Merrimack River and Salmon Brook. We were asked some time ago to clean out Salmon Brook, and we finished that. We have spent about $3,000,000 so far. Before we get through, we are going to have to spend another $5,000,000.

We have done more than we should have done. In one area, in the Nashua Northwest Area, there were about 700 homes built which were dumping into the Nashua River. We have piped all of that and gone into a large lagoon, about a 14-acre lagoon.

Also, realizing the pollution of water, we are blessed in Nashua with a great water system, great watershed, some of the finest drinking water in the country. We don't need drinking water. We have an abundance of it. But, realizing that down below the people are drinking the Merrimack River, and realizing that if we didn't do something about it, it would make conditions worse, and also realizing we had a high water table at one section of our city, that if it went into septic tanks it would pollute our water system, we spent a million dollars just to make sure that the water would be clean and kept clean.

Now, this very dumping gives us 30 per cent, and the State gives us 30. I want to say this: The State has cooperated 100 per cent with the City of Nashua, and they are ready and willing to go further if we have more Federal money.

We have done about one third of what is to be done in the City of Nashua. We are way ahead of our schedule. Our preliminary plan is completed, and it was completed about four years ago. Camp, Dresser & McKee have been doing our engineering for us, and they have done a tremendous job. We have borrowed money to do this work. We have borrowed money, and actually our taxpayers are paying it.

But let me say this to you: If you want any city official, you must realize that pollution is the easiest thing in the world to sell to your people when they realize you are doing something for them to keep the country clean.

Now, I have had no difficulty with my aldermen. I have no difficulty with the people of Nashua, but we do want to go to the Federal Government and say, "Give us more money." I would do this job tomorrow. I would complete the job if we had more Federal assistance.

Nashua is ready and willing to spend its share to keep the Nashua River and the Merrimack River clean. We have cleaned out Salmon Brook, and that is one of the greatest recreational areas of the City of Nashua. We are going to have there a quarter of a mile of beach right near the center of town, and the only way you can do that is de-pollute, but the Federal Government has to come forward with more money, and if you can't do it, no matter what the State does, even if the State says, "You are going to be fined if you don't do it," we are going to be without a system.

I feel this way. The Federal Government spends millions of dollars on highways. We can get from one place to another. I want our rivers clean, our water clean, and it has got to be clean.

We built a treatment plant anticipating an influx in population. We built it so it will take care of at least a 75,000 population community with the addition of new machinery and a few settling tanks. We didn't have to build one that large, but realizing that this is going to be sooner or later, it was the cheapest thing for us to do.

As soon as the Federal Government realizes that this is an important thing, the most important part of our community or of life, good clean healthy water, we will be a good clean healthy country, and you fellows know that, and the Federal Government should know it, and the State of Massachusetts at least should help these communities, but that is their problem.

Our problem in New Hampshire -- I want more money from the Federal Government, and if we don't get it, ladies and gentlemen, we are just going to be in very bad shape.

Now, we know all these things, and that is why I am down here today, because I knew that this was a very important meeting. We have other meetings to go to too. I have been here since 9:30, and so have the rest of these boys, but it is important, and I hope you Federal men will realize what we are talking about. I hope you Federal men realize we need assistance. I hope you bring this message back to the powers that be, that we need more money, because if we don't get it, we just can't continue on.

Thank you very much.

MR. STEIN: Thank you, Mayor. Are there any comments or questions?

MR. LaCAVA: I would like to ask one question. Mr. Mayor, wasn't this project that your city had done mostly on a voluntary basis?

MAYOR VAGGE: Yes, it was. The only time we arrived at something was in the Salmon Brook area, whether it was classified, but you gave us plenty of time to do it. But I thought, as a Mayor, I owed it to my community to get this job done, and I know that the engineering and the cost of the work we had done two years ago, if we had to do it today, would cost at least $200,000 more, so I think it is a great thing. And I will say that if it is four and a half million right now, ten years from now it would cost you eight million dollars.

MR. LaCAVA: It's good business.

MAYOR VAGGE: I have gone over to the Nashua River. That is the worst. If you ladies and gentlemen came through Nashua in the dry spell, I'm going to tell you you will never come through Nashua again.

Right by the Main Street Bridge, there are hundreds and hundreds of dead fish up on the banks, and the river is so black I don't know that you can drown in it. I'm not fooling. I don't know that you can sink in it.

We have taken it and de-polluted part of the river, which maybe we shouldn't have done, but we did it to get a head start on it. But the Nashua River that comes into Nashua itself is an awful thing. I know people call me on hot nights and want to know what we are going to do about it. They think that something should be done overnight. But the Government should do something about helping clean it out.

With the Nashua River, you go up to any health office you want, and it is amazing that we haven't had some epidemic in the City of Nashua. It is amazing. We have a terrific Health Department, and that's all they do -- any time we find anything happening, they immediately go to the source. You will find these kids jumping into the Nashua River in the woods, and it so happens, with skin disease and all that, we attribute that to the Nashua River, and something should be done about it.

MR. STEIN: Mr. Rogers?

MR. ROGERS: Where do you say that pollution comes from, Mayor?

MAYOR VAGGE: Somewhere in Massachusetts. I think it is in Fitchburg, or up through there.

MR. ROGERS: In your opinion, this is a health hazard?

MAYOR VAGGE: Absolutely.

MR. ROGERS: Thank you.

MR. STEIN: I would like to make a comment here off the record.

(Discussion off the record.)

MR. STEIN: On the record.

MR. HEALY: The State of New Hampshire has indicated there is a need for more money, and we have made that as an official statement.

MAYOR VAGGE: That's right.

MR. HEALY: Feeling that that was much more necessary than extended powers for enforcement on the Federal level.

MAYOR VAGGE: The State of New Hampshire, as I say, and also the Mayors' association, the Conference of Mayors, they speak for me, rather than my going to Washington and speak on the thing, but we need more help anyway, regardless of how you figure it out.

MR. STEIN: By the way, I understand that the Senate Committee on Public works, Senator Muskie, that handles this basic legislation, will be holding hearings on water pollution matters as well as air pollution, but specifically on water pollution matters, somewhere in New England.

MR. TAYLOR: Portland, Maine.

MR. STEIN: Portland is where I expect it would be. The hearings will be held sometime this spring, and if these are the problems in New England, while you may not want to come to Washington, I think this is the proper forum to go to.

MAYOR VAGGE: It is going to help, as you say, and if I have to go to Washington, I will be very happy to go there.

MR. STEIN: By the way, Mayor, thank you for a very good statement.

Mr. Palazzi?

MR. PALAZZI: That completes the New Hampshire story.

MR. STEIN: Thank you, sir.

At this point, we would like to call on Mr. Worthen Taylor of Massachusetts. Mr. Taylor.

STATEMENT OF WORTHEN H. TAYLOR, CONFEREE AND DIRECTOR AND CHIEF ENGINEER, DIVISION OF SANITARY ENGINEERING, MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

MR. TAYLOR: Mr. Chairman, Members of the Conference:

Under date of September 23, 1963, Mr. Anthony J. Celebrezze, Secretary, Health, Education, and Welfare, called a conference on the matter of water pollution on the Merrimack River and its tributaries in New Hampshire and Massachusetts to be held under the provisions of the Federal Water Pollution Control Act (33 USC 466 et. seq.), otherwise known as Public Law 660 of the 84th Congress, as amended. Notice of the conference refers to the Merrimack River and all of its tributaries in the States of New Hampshire and Massachusetts. However, very properly, only those portions of the Merrimack River and its tributaries in New Hampshire as affect the water quality have been considered in the U. S. Public Health Service report relative to this matter. In Massachusetts, all of the waters of the Merrimack River Valley are under consideration. The report of the U. S. Public Health Service was prepared very largely from data supplied by the State of New Hampshire and the Commonwealth of Massachusetts. In a very general sense, the report is factual but the Department of Public Health, as the water pollution control agency of the Commonwealth of Massachusetts, does not fully agree with its conclusions.

It is my understanding that this conference must give consideration in three areas.

a. Occurrences of pollution of interstate and navigable waters subject to abatement under the provisions of Public Law 660.

b. Adequacy of measures being taken towards the abatement of pollution.

c. Nature of delays, if any, being encountered in abating the pollution.

The Merrimack River was developed at a very early date for industrial purposes. Industries were constructed in the bed of the stream in order to take advantage of direct water power. Looms, washers and other machinery were actuated by belts or cog wheels transmitting power directly from the stream. Water was taken from the stream for industrial purposes and wastes were discharged directly back to the stream as a ready means of disposal. Since no treatment was afforded the wastes, there was no reason to provide separation of sewage from industrial wastes or of grossly polluted wastes from relatively clean rinse waters. All wastes, despite their source and degree of pollution were discharged into numerous common drains discharging directly to the river. The Massachusetts Legislature recognized the Merrimack River as an industrial stream and exempted it from pollution abatement programs. It was not until 1945 that the Commonwealth adopted a comprehensive water pollution control law giving to the Department of Public Health a directive to promulgate rules and regulations to prevent the pollution and contamination of the waters of the Commonwealth, including the Merrimack. This authority continues to prevail and is the only authority currently vested in the Department to control or abate pollution in this stream.

As stated in the report of the U. S. Public Health

Service, sewage and industrial wastes continue to be discharged to the Merrimack River and its tributaries. However, sewage treatment facilities have been provided by municipalities, industries, institutions and individuals to prevent the pollution of certain of the tributaries of the Merrimack River in Massachusetts, but no community has provided sewage treatment facilities to prevent the pollution of the main stem of the river. Presently, the City of Newburyport is constructing such works and operation is scheduled for June or July of this year. Many industries have provided works to abate pollution of the tributary streams, but in only one instance has an industry provided facilities for the treatment of its sewage and industrial wastes discharged to the main stem.

The Department of Public Health has adopted a policy of encouraging industries to discharge both sewage and industrial wastes to municipal sewerage systems. Thus, in many instances, the responsibility for the abatement of pollution rests with the municipality rather than the industry. Industries have been encouraged to reduce pollution loads by good housekeeping, recirculation of process water when applicable, substitution of process chemicals for low BOD in instances where they may replace process chemicals of high BOD, and the use of chemicals or processes to increase

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the utilization of certain process chemicals. Whenever these measures have failed to produce a satisfactory effluent, the Department has encouraged the construction of waste treatment facilities. It should also be pointed out that the so-called wet process industries which formerly provided the backbone of the economy of the area have been replaced to a large extent by machine tool, electronic and other industries having very limited volumes of liquid wastes. Since a study conducted by the Department in 1946, the organic industrial waste load to the Merrimack River has been reduced approximately 70 per cent as a result of this change in the industrial economy.

The pollution of the Merrimack River at the present time is both from industrial wastes and domestic sewage. From all of this, we must conclude that the Merrimack River is a highly polluted stream and that a program of pollution abatement is most desirable. Furthermore, it may be concluded that the measures which have been taken to abate pollution of these waters have not been adequate to provide a safe clean and esthetically acceptable water. However, the Department of Public Health is strongly of the opinion that pollution arising in Massachusetts is not endangering the health and welfare of the residents of New Hampshire, nor is pollution arising in New Hampshire endangering the health or welfare of the residents of Massachusetts.

Neither the Merrimack nor the Nashua Rivers has been classified. Recent studies of these streams have provided data on present water quality and workable programs to abate pollution and attain a water quality suitable for future uses. These reports are the "Report of the Department of Public Health Relative to the Preparation of Plans and Maps for the Disposal of Sewage in the Merrimack River Valley" dated December 4, 1963, including the report of its Consulting Engineers, titled "Commonwealth of Massachusetts, Department of Public Health, Report on Pollution Control of the Merrimack River, December 1963" by Camp, Dresser and McKee, and the "Final Report, Nashua River Survey" by The National Council for Stream Improvement (of the Pulp, Paper and Paperboard Industries), Inc., dated January 15, 1964, copies of which have been made available to all Conferees.

The sewerage systems of the cities of Haverhill, Lawrence, and Lowell are on the combined plan, and it does not appear to be practicable to provide for the separation of domestic sewage from storm water in all instances. Thus it will be necessary to provide for the treatment of domestic sewage and the combined overflows in separate systems in each of these communities. The overall plan of pollution abatement along the main stem of the river system is to provide primary treatment with chlorination or its equivalent for the cities and towns in the harbor area, including the city of Newburyport, town of Salisbury, town of Amesbury, and the town of Merrimac. It is proposed also to provide primary treatment with chlorination for the city of Haverhill and for the town of Groveland (if and when a public sewerage system is provided for that community). The effluents of these plants will discharge into waters affected by the tides. Above Haverhill it is proposed to provide pollution abatement facilities to serve jointly the city of Lawrence and the towns of Andover, Methuen and North Andover. This plant would be of the extended aeration type with chlorination of the effluent. In the Lowell area, little financial benefit would be derived from the construction of regional facilities. It is not practical to decide at this time as to which if any communities would provide joint facilities as against individual facilities. However, secondary treatment with chlorination will be required for the city of Lowell and the towns of Dracut, Billerica, and Chelmsford. Secondary facilities will also be required for the towns of Tewksbury, Tyngsborough, and Westford whenever public sewerage systems are provided. For the cities of Haverhill, Lawrence, and Lowell, it is proposed to provide for the chlorination of the effluents from the combined sewers at a later date.

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The first phase of the abatement program would not include treatment of combined sewer overflows during storms.

Along the main stem of the Merrimack River, industries will be required to discharge their sewage and industrial wastes to the municipal sewerage systems or provide treatment of the wastes. Wherever possible, industries will be encouraged to utilize the municipal system wherever this may be accomplished without injury to the sewers or treatment facilities.

The Nashua River receives large volumes of both domestic sewage and industrial wastes. Sewage treatment plants have been provided for the cities of Fitchburg and Leominster and the towns of Clinton and Ayer. These sewage treatment facilities are operating efficiently with the exception of that of the city of Leominster which is grossly overloaded. Construction is under way to provide additional facilities which will be of adequate capacity for that city. Domestic sewage from a portion of the town of Lancaster is discharged to the river. Engineering studies have been completed recently, and sewage treatment facilities will be required to serve that community. Engineering studies have also been completed for the town of Ashburnham. It will be necessary also to require a study for the town of Westminster. Engineering studies are under way relative to pollution from the town of Sterling. There are several sewage treatment facilities serving schools and other public facilities in the area, all of which appear generally to be adequate. It should be noted that the military installation, Fort Devens, is provided with a sewerage system, sewage from which is discharged to a sewage treatment plant and the effluent to the ground. In the overall program it will be necessary to provide for the removal of settleable solids from all industries and to provide chlorination of the effluents of all municipal and institutional sewage treatment facilities.

There are currently under way studies relative to low flow augmentation for the Nashua River. These studies are being conducted by the Public Health Service for the Corps of Engineers. These studies to date show conclusively that low flow augmentation would be of great assistance in increasing the dissolved oxygen content of the waters of the river in the reach from Fitchburg to Clinton over and above that which we may anticipate from the operation of the facilities mentioned above.

Before arriving at a final conclusion as to the necessary works, it will be necessary to have available more data relative to this low flow augmentation program.

Within the Su-As-Co River Basin, which includes the Sudbury, Assabet, and Concord River Valleys, all tributary to the Merrimack River, sewage treatment plants have been provided for every municipality served by a public sewerage system as well as schools and institutions in the valley. At the present time the town of Shrewsbury has recently completed construction of a sewage treatment plant and plans are in preparation for extensions of the public sewerage system. Also it should be noted that the town of Billerica has a small sewage treatment plant serving the North Billerica District. However, the town currently has in preparation plans and specifications for a sewage treatment plant to serve unsewered areas within the municipality itself. These works will be of a secondary nature and will discharge to the Concord River a short distance above its confluence with the Merrimack River. Sewage treatment plants already have been provided in the Su-As-Co River Valley for the towns of Westborough, Marlborough, Hudson, Maynard, and Concord. These plants were originally constructed in the 1890's and early 1900's but have been rehabilitated during the past few years. Sewage treatment plants of a secondary nature were provided originally for the towns of Framingham and Natick; however, the effluents discharged to a small brook tributary to the Sudbury River where the dilution was not adequate to receive even well-treated effluents, thus making it necessary to construct a trunk sewer to convey the sewage of these communities to the Metropolitan area where it is treated at the Nut Island Sewage Treatment Plant. Plans are also in preparation for the town of Ashland to provide sewers and to connect to the Metropolitan sewerage system through the town of Framingham. Industrial waste treatment facilities have been provided in the Su-As-Co River Basin, most of which are adequate at the present time. It will be necessary to provide industrial connections to the public sewerage system within the town of Billerica when that system has been placed in operation. Before making a final decision relative to the ultimate disposal of the sewage and industrial waste from the town of Billerica it will be necessary to make further studies relative to low flow augmentation which may result from the present construction of reservoirs under the Small Watershed Act. Certain reservoirs are already in construction, but delay is anticipated as there are not sufficient funds at present to complete the program.

The Commonwealth of Massachusetts has authorized many studies relative to the pollution of the main stem of the Merrimack River. The only major delays which have been encountered in the pollution abatement program on the Merrimack River have been on the main stem of the stream. The cities of Lowell and Newburyport are in areas designated as Area Rehabilitation Administration areas. However, all communities in the Merrimack River Valley, with the exception of the towns of Merrimac and Westford, are eligible for Accelerated Public Works grants.

Under the provisions of General Laws, Chapter III, Section 1b, the Department of Public Health, as the water pollution control agency, cannot force municipalities to proceed with pollution abatement programs unless they have financial ability to provide such works. A determination of this nature is made by the Director of the Division of Accounts of the Department of Corporations and Taxation upon request of the Department. Such requests only precede decision to refer such cases to the Attorney General and determinations are not made on an informal basis. Discussions have shown that certain of the cities and towns in the River Valley are in financial distress, and it does not appear probable that a pollution abatement program as recommended by the Department of Public Health and its consulting engineers, Camp, Dresser and McKee, can be undertaken in their entirety at this time without substantial financial assistance. The grants program under provisions of P. L. 660 does not provide sufficient funds for distribution within the Commonwealth of Massachusetts to substantially assist in the overall Merrimack River Pollution Abatement Program. Funds available to the Commonwealth with the present

$100,000,000 Federal appropriation amount to approximately 2.1 million dollars per year. It does not appear reasonable to anticipate that all of these funds could be allocated to the Merrimack River Valley program. One might reasonably anticipate slightly over one million dollars per year from this source could go into the Merrimack River program. The Merrimack River program is now estimated to cost in the first instance, that is the dry weather flow program, ninety-four million dollars; and thus to obtain any substantial assistance from the P. L. 660 program it will be necessary to provide greater Federal appropriations. Whereas many communities are receiving a full thirty per cent for construction purposes, cities and towns on the Merrimack River on an overall basis would not receive much, if anything, more than one per cent under the P. L. 660 grants program. Furthermore, the restrictions on the distribution of such funds are such that there could be no equal or equitable distribution of funds between the communities in the river valley.

The Commonwealth of Massachusetts does not provide a state grants-in-aid program to assist in the construction of sewage treatment facilities; however, this matter is under study at the present time. There is before the Legislature House Document No. 435 which would provide grants up to twenty per cent of construction costs. Funds are available from Housing and Home Finance Agency for public works planning, and several communities have already taken advantage of such, and others have or are about to make application for such interest free loans. It is most difficult to anticipate the amount of assistance that can be provided to the communities in the Merrimack River Valley with so many unknown factors at this time.

The Department is of the opinion that the program of pollution abatement in the harbor area, including Newburyport, Salisbury, and Amesbury, should proceed immediately and that chlorination facilities should be included. It is further of the opinion that pollution abatement programs in the cities of Haverhill, Lawrence, and Lowell should proceed immediately but at a scale commensurate with their reasonable ability to finance such, and to this end studies are currently under way to determine what works could provide a substantial degree of abatement within their ability to finance.

The Department therefore concludes that there are currently unknown factors which make it impossible to arrive at a complete and reasonably probably schedule of compliance to a pollution abatement program at this time, and recommends that this conference be recessed. During the recess period, the Department of Public Health will prepare and present a pollution abatement program and schedule of compliance. It will also cooperate with the appropriate local, state, and Federal agencies to provide the necessary financial and technical data essential to the abatement program. It will expedite the program even ahead of the total program in every instance where sufficient data are available to assure an adequate and workable program.

MR. STEIN: Thank you, Mr. Taylor. Are there any comments or questions?

MR. KNOX: No.

MR. STEIN: Mr. Rogers?

MR. ROGERS: I just want to clarify one point. Does Salisbury have primary treatment?

MR. TAYLOR: The town of Salisbury has a public sewerage system that serves the beach area. This is owned by a private corporation. There are primary treatment works with chlorination to serve the beach area, although these works are not adequate for the purposes of the town. The rest of the town is not served by a public sewerage.

If you are talking about a proposal, there are two proposals before the town at the present time. One is to provide secondary treatment by way of lagoons, and the other by way of primary treatment and chlorination. Which one will be finally accepted, I do not know.

MR. ROGERS: On page 4, you mentioned the National Council for Stream Improvement reports had been given to all of the Conferees. It is my understanding --

MR. TAYLOR: I said it would be made available, I believe the words were, and my instructions are that since I have given my dissertation, you may have a copy.

MR. ROGERS: I just want to make it clear. The Public Health Service has not received their copy.

MR. TAYLOR: But you may have it now.

MR. ROGERS: All right. On Page 6, it is mentioned that before you can reach a final conclusion on necessary works regarding the Nashua River, you will need to have more available data relative to this low flow augmentation program.

I would like to point out that the Federal law requires that adequate treatment be provided, and I don't see that there is any question about any more data making any difference in this particular instance. You are going to have to have adequate treatment anyway before you can provide for low flow augmentation as a non-reimbursable item.

MR. TAYLOR: As a non-reimbursable item. You are correct there.

MR. ROGERS: Yes.

MR. TAYLOR: But this could be accomplished on a reimbursable basis as well as by a non-reimbursable basis.

MR. ROGERS: Yes. This is true, if it could be provided.

MR. TAYLOR: That is correct.

MR. ROGERS: I have another point too. On the low flow that is mentioned in connection with the Su-As-Co River Basin, I would just like to clarify for the record, this is primarily a state financed project; it is a small watershed project?

MR. TAYLOR: No. This is both Federal -- well, it is a three-way participation, local communities, State and Federal, and the deficiency in appropriation at the present time is that on the part of the State, I believe.

However, the second low flow augmentation reservoir that would be provided is a Corps of Engineers project, which has currently been considered but has not been authorized by Congress.

MR. ROGERS: For the record, I would like to point out that under the Small Watershed Act, and I believe Mr. Watson could clarify this, I don't believe you can provide low flow augmentation as a non-reimbursable item.

I notice you have given quite a program on the

Nashua River communities. Did I miss something as to what the program is for the industries on the Nashua River for pollution abatement?

MR. TAYLOR: You didn't miss anything. I'm sure of that.

MR. ROGERS: Could you clarify this?

MR. TAYLOR: We have discussed this matter with all of the industries on the Nashua River, and they have all provided a time schedule and a program of abatement.

I am not at present able to tell you that we are satisfied with each and everyone of these, and we intend to take them up individually with the industries before making any public pronouncements as to their programs, and the adequacy of such.

In general, we are asking that the industries provide for the removal of settleable solids at this time, and, in general, this is the agreement, the one they have agreed upon. I am not sure I can always agree with them as to their time schedule, but this is in the works at the present time.

I might say for the record that the industries on the Nashua River have been most cooperative with the Department in making surveys and preparing data for us as we have asked for it, and I am sure will go forward with an adequate abatement program.

MR. ROGERS: One final question. You mentioned this one per cent as being available for the Merrimack communities in the way of Federal grants. Is this assuming you were going to do the whole program in one year?

MR. TAYLOR: This means yes -- I mean if we do it in one program. Actually, we have about $1,000,000 to go into this thing with $94,000,000. This is one reason why it is quite probable that it will have to be scheduled over a larger number of years than we would like, and also to show you that these cities and towns will not get anywhere near the normal assistance which might be anticipated.

MR. ROGERS: But if it were spread out over one year, they will get more than one per cent?

MR. TAYLOR: Yes.

MR. STEIN: Are there any further questions or comments?

(There was no response.)

MR. STEIN: I just have one question, and this is for clarification.

In Mr. Pahren's statement, I was impressed by the dismal litany of so-called attempts to clean up the Merrimack in 1908, and the report in 1909. Then again in 1913, the State Board of Health wanted to make a report, and again it was ordered to investigate the Merrimack River in 1923, with the report being delivered in 1924. In 1928, the Department of Health was again directed to investigate pollution and made its report in 1929. Then the Act of 1935 created the Merrimack Valley Sewerage District, which didn't get any money, and this was reestablished in 1938, and so forth. Yet, in the statement that you have, you say: "The Massachusetts Legislature recognized the Merrimack River as an industrial stream and exempted it from pollution abatement programs."

How does that fit?

MR. TAYLOR: There was no comprehensive water pollution control law in Massachusetts until 1945. Prior to that, the only legislation on the books that referred to the Merrimack River stated specifically that it was exempted from the Water Pollution Control Act.

MR. STEIN: Then what were all these activities or these investigations through the years? This is an information question. I don't understand it.

MR. TAYLOR: I think that I might be able to shed a little light on this.

There was a fellow in Massachusetts way back in 1850 or so by the name of Lemuel Charter who wrote a sanitary report on the conditions of Massachusetts, and, among other things, he established or attempted to establish the

Massachusetts Department of Public Health. It was then the State Board of Health. He proposed that the Legislature give to the Board only authority to recommend, and that the enforcement of all of his recommendations, other than the persuasive ability of the Department, was to rest with the Legislature itself.

MR. ROGERS: One further question, Mr. Chairman?

MR. STEIN: All right, Mr. Rogers.

MR. ROGERS: Just one point here. You mentioned the organic industrial waste load reduction since 1946 as being 70 per cent. How about the bacterial pollution? Has there been any reduction since 1946 on bacterial pollution?

MR. TAYLOR: No. There has been a slight increase.

MR. STEIN: Are there any further comments or questions?

(There was no response.)

MR. STEIN: If not, thank you, Mr. Taylor.

MR. TAYLOR: Mr. Chairman, I have received two communications which I would like to put into the record before calling on others from Massachusetts.

MR. STEIN: Yes.

MR. TAYLOR: The first was sent to me and it reads:

"While recognizing the magnitude of the problem and the great expense involved, I believe every avenue

> should be studied for possible solution of this problem of abating pollution in the Merrimack River.
>
> "Please record my interest in this matter, and I would be most grateful for any information you might forward to me, and any suggestions as to how I might be helpful."

This is signed by William H. Bates, who is our Congressman from -- I don't know what district it is, but it includes all of Essex County.

MR. STEIN: Yes.

MR. TAYLOR: The second is addressed "To Whom it May Concern," from the Office of the City Manager, City of Haverhill, and it reads:

> "The City of Haverhill wishes at this time to be recorded in opposition to any plan that will place the financial burden of an accelerated Merrimack River clean-up program on the taxpayers of the cities and towns along the shores of the Merrimack River.
>
> "We are in a period of financial crisis, and to saddle the home owners of our community with this multi-million dollar project now would result in staggering increases in our respective tax rates.

"Yours truly, James P. Ginty, Acting City Manager."

MR. STEIN: I have been taking instructions up here from Mr. Palazzi on New England town type of democracy, and it is suggested that we ask for a show of hands for those who want to take a ten-minute break and those who don't, to see if we are going to push through. It may be debatable, although Mr. Taylor probably can give us the information as to whether we are going to be able to finish today or not.

MR. TAYLOR: I would suggest that we finish today.

MR. STEIN: We will try to.

MR. TAYLOR: I would suggest that we do.

MR. STEIN: But may we have a show of hands? Will those who want to take a break raise their hands?

Now, those who want to try to push on through without a break?

Mr. Taylor, may we please continue?

MR. TAYLOR: I would like to introduce at this time Senator William X. Wall, who is also Chairman of our Joint Committee on Public Health of the Massachusetts State Legislature. Senator Wall is from Lawrence.

Senator Wall.

STATEMENT OF WILLIAM X. WALL, STATE SENATOR, 5th ESSEX DISTRICT, MASSACHUSETTS

SENATOR WALL: Chairman Stein, Members of this Conference:

My name is William X. Wall, State Senator, 5th Essex District, comprising the City of Lawrence and the Town of Methuen, through which the Merrimack River flows. I am Chairman of the Committee on Public Health and I am Chairman of the Committee on Water Supply and Water Resources.

I appear here this afternoon to register my protest against this unequalized expenditure of money that the citizens of Greater Lawrence will have to pay if this sewage project comes into being.

At the outset, I would like to bring to your attention the story of Lawrence's Operation Bootstrap. It is a story of a fighting people by its energetic leaders of a courageous city. It is the story of the hard grinding work, of disappointments and setbacks of debates, arguments and disagreements, of doubts and anxieties, then of more work by volunteer, dedicated unpaid citizens and officials -- and, finally, success. It is a matter of historical fact that Lawrence was a one-industry town. Lawrence millworkers had the reputation of free spenders when they had money. Lawrence has had its share of economic hardship. Lawrence has made important strides in revitalizing its economies. Therefore, Mr. Chairman, Lawrence should not be overburdened with projects initiated without the consent of its citizens who are the ones who must pay the bills.

These evangelists for purification of the Merrimack River should realize the prohibitive cost entailed. This truly is a matter for the Federal Government. It is altogether too costly for the State. This expensive, extravagant monstrosity has nothing on the legendary Jesse James. This project is too costly for Greater Lawrence.

Today, Lawrence is enjoying a new economic facelifting. Having lost all her textile industries several years ago, she has no diversified and is second to metropolitan Boston.

About 50 years ago, the Massachusetts Legislature appropriated one million dollars for the improvement of the Merrimack River on the condition that the Federal Government grant some money for the improving of this river. Although detailed blueprints and extensive engineering investigations were made, the project failed to materialize with regard to the Merrimack River. Instead, the Connecticut River was developed -- with the result that the cities and towns bordering on the Connecticut River are now enjoying the resulting benefits of the improvements of that river.

What better opportunity could there be for the Federal Government to do something for the welfare of its citizens? It is so concerned with the plight of the people in countries outside of the United States -- it is only fair to submit that a little concern should be shown for those in need of assistance here in our own country.

If dredging operations were carried on simultaneously at different sections of the Merrimack River, employment for thousands of people would be immediately available. Making the Merrimack River navigable would, beyond a doubt, help Lawrence develop its present industries and obtain new ones. Quicker and cheaper transportation would be made available -- a factor which is often decisive when considering the operating expenses of a new industry.

Massachusetts, as you all know, was originally developed from the sea. It was never developed by railroads, but from the water. Prior to the last flood in 1936, oil and coal barges came up to Haverhill. With the neglect of the navigable rivers, the leadership of Massachusetts diminished both in the industrial field and in the shipping industry.

W. X. Wall

Here, now, is an excellent opportunity to help Massachusetts regain its former enviable position as leader in the manufacturing world as well as restore some of the lost shipping business to her.

Everyone is interested in bringing a stop to the spiral of inflation dizzily speeding upwards. I wish to offer just one example of how competition made available by the dredging of the river would stop the spiral in this one instance. We are all acquainted with the recent transportation problem to the commuters by the railroads and busses. If a boat line were established between Lawrence and Boston, is it too remote a result to expect that this could solve the transportation problem?

I urge your body to consider most seriously a favorable report in reference to the dredging of the Merrimack River, and thus once again restore this stream to its former greatness. By so doing, the economic welfare of those cities bordering this river, particularly Lawrence, would be tremendously improved.

Now, I don't like to be a guest of a host and then knock the host down, but because of a situation here, I must proceed and beg the indulgence of the Chairman and the Conferees when I make this next quotation.

I would like to call your attention, and I have the exhibit right here, to one of our largest newspapers in New England, the Lawrence-Eagle Tribune, in which there appeare under a Washington UPI dateline on September 27, 1963, a statement made by Secretary Anthony Celebrezze of the Department of Health, Education, and Welfare, in which he stated that the Merrimack River was filthy. I show you this exhibit for your perusal. In the same newspaper, on November 13, 1963, the same Commissioner Anthony Celebrezze disputed the statement charged to him on the pollution of the Merrimack River. This was a terrible statement, if it were true, as it would discourage new industries settling in areas where the Merrimack River flows.

In closing, I wish to present Exhibit No. 3 concerning legislation which I filed calling upon the United States Congress to enact legislation extending financial aid to the Commonwealth of Massachusetts for purification of the waters of the Merrimack River. The Massachusetts State Senate adopted this resolution and it is now before the United States Congress for their consideration.

Mr. Chairman, neither Lawrence nor Methuen has this kind of money to be expended for a project such as this one that is the obligation of the United States Federal Government.

In conclusion, I might make this observation that

I think is very important. Several years ago, legislation was filed in the Massachusetts General Court with reference to the construction of sewage treatment works at Lowell, Lawrence, Haverhill and Newburyport harbor.

Dissemination which was to explain information about the construction of sewage treatment works was to be furnished by a board to the inhabitants of Merrimack Valley. This dissemination of information was considered important because of Chapter 658 of 1947 referred to the voters at the State election on November 2, 1948 the question of whether or not a sanitary district should be created and an appropriation of one million dollars made immediately. The question appeared on the ballot in the cities and towns of Amesbury, Andover, Billerica, Chelmsford, Dracut, Groveland, Haverhill, Lawrence, Lowell, Merrimac, Methuen, Newbury, Newburyport, North Andover, Salisbury, Tewksbury, Tyngsborough and West Newbury, and read as follows:

> "Shall an act passed by the general court in the year 1947, entitled 'An Act establishing the Merrimack River Valley Sewerage District for the purpose of constructing, maintaining and operating sewerage works in the Merrimack River Valley,' be accepted?"

In order that the inhabitants of the Merrimack

Valley might be informed respecting the sewage treatment works program, the Board furnished information to all the newspapers in the valley and directed correspondence to service clubs (including chambers of commerce, boards of trade, Rotarians, Kiwanis, Lions, and exchange clubs), fraternal organizations, parent-teachers associations, sportsmen's clubs, women's clubs and American Legion Posts, advising of the availability of representatives of the Board to explain the need for sewage treatment works in the valley and to answer any questions which might be propounded. The consensus of opinion ran strong against such expenditures by the various towns and cities, and the argument was that if such a project was constructed, it should be financed with Federal funds, since much of the pollution was contended to have accrued in New Hampshire. When the citizens had voted on the referendum, a majority of the voters were not desirous of activating the construction program of this kind, at its own expense.

I would just like to give you this tabulation, and then give up my time to the next worthy gentleman, if I may.

MR. STEIN: Surely.

SENATOR WALL: The tabulation of votes on the referendum was as follows:

City or town	YES	NO	Blanks
Amesbury	1,001	3,515	726
Andover	1,179	4,261	1,016
Billerica	968	2,538	728
Chelmsford	488	3,420	444
Dracut	534	2,357	645
Groveland	302	743	150
Haverhill	3,627	15,385	3,043
Lawrence	6,881	25,060	8,369
Lowell	5,087	37,166	5,845
Merrimac	422	731	215
Methuen	2,183	7,195	2,218
Newbury	415	305	213
Newburyport	3,170	1,848	2,092
North Andover	587	3,458	557
Salisbury	688	318	436
Tewksbury	416	1,220	276
Tyngsborough	189	603	167
West Newbury	340	257	146

Mr. Chairman and Members of your Honorable Committee, let me sum this thing all up this way:

The people that I represent are dispossessed of the financial ability to digest this crash program. I don't feel we are financially able to extend ourselves. This would be biting off more than we can chew.

This group of Federated States have importuned themselves upon the United States Congress in favoring this pollution legislation which might be good for them, but prohibitively financially impossible for us.

I am not against cleaning up the Merrimack River, as my good friend, Worthen Taylor, will testify to it. I have fought for this thing fifteen years ago. But I am against saddling the taxpayers with a Frankenstein debt running into millions of dollars, and I sincerely hope that Uncle Sam comes up and gives us the money to do it.

MR. STEIN: Thank you, Senator Wall. Are there any comments or questions?

(There was no response.)

MR. STEIN: Senator Wall, just one moment, please.

At least, to my mind, I didn't hear any dates for a crash program yet from either State or the Federal Government, unless you consider that 1983 proposal from New Hampshire as a crash program.

SENATOR WALL: Is that a question or --

MR. STEIN: Massachusetts, as I read the Massachusetts statement, says that it is impossible to arrive at a completely reasonable probable schedule of compliance, and they asked for a recess. Maybe you have a comment on that.

SENATOR WALL: Give us some money from Washington.

MR. STEIN: All right. Would you wait just a moment? I have just two more points to bring up.

Supposing the Federal Government does dredge the Merrimack, how do we get the boats over the Haverhill Falls or the Lowell Dam?

SENATOR WALL: We'll take you for the first ride. That can be done. Mayor Zabriskie will tell you how that is done.

MR. STEIN: The next point I want to make is this: Some of the people here know how difficult it is to get to talk to Secretary Celebrezze. I don't think people did talk to him. The only issuance I know he made on the Merrimack River was one of these routine press releases, which has been submitted to the States.

Because this has been commented on, I would ask that this press release be included in the record with that short newspaper article you referred to.

(The press release and newspaper article are as follows:)

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Public Health Service
Washington 25, D.C.

FOR RELEASE IN A.M. PAPERS
Tuesday, September 24, 1963

Secretary of Health, Education, and Welfare Anthony J. Celebrezze today announced the convening of an enforcement conference on pollution in the Merrimack and Nashua Rivers.

This action is being taken under provisions of the Federal Water Pollution Control Act which permit the Secretary of Health, Education, and Welfare to call a conference to correct pollution if on the basis of reports or studies he has reason to believe that pollution occurring in one State endangers the health and welfare of people in another. The conference had also been requested by Governor Peabody to improve the Merrimack River for industrial, recreational and public water supply uses. It will be held in Boston, Massachusetts, on February 11, 1964.

The Merrimack's pollution has caused the State of Massachusetts to withhold sanctions for boating and water-skiing activities. The shellfish flats at the mouth of the Merrimack River have been closed since 1926 and clams taken from moderately polluted water are treated in clean water to make them fit for human consumption.

Lawrence, Massachusetts, obtains its water supply from the Merrimack but State authorities have advised the city to make bacterial analysis five days a week on the raw water and treated water because of possible contamination in the water.

High bacterial concentrations have been reported in the Merrimack at the Massachusetts-New Hampshire State line. Elsewhere, industrial waste discharges cause objectionable colors in the river water.

The purpose of the conference, which is open to the public, is to review the pollution situations in the river with the Massachusetts and New Hampshire State agencies and, if appropriate, recommend appropriate action with timetables to improve the quality of the waterways.

The conferees will be representatives of the water pollution control agencies for Massachusetts and New Hampshire and Herbert H. Rogers of Boston representing the Department of Health, Education, and Welfare. Murray Stein, of the Washington office of the DHEW, will preside at the conference.

W. X. Wall

LAWRENCE TRIBUNE

9-26-63

Cleanup Ordered

MERRIMACK RIVER FILTHY,

SAYS SECRETARY CELEBREZZE

WASHINGTON, (UPI) -- The Federal Government considers three big New England rivers filthy and wants them cleaned as soon as possible.

That is the reason Secretary Anthony Celebrezze of the Department of Health, Education, and Welfare ordered enforcement procedures to start on the Connecticut River in Massachusetts and Connecticut, and the Merrimack River and Nashua River in Massachusetts and New Hampshire.

He ordered into effect the 1961 Water Pollution Control Act which puts the Federal Government in the role of policeman to watch that the rivers are cleaned.

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MR. STEIN: And now I would like to read the letter that Secretary Celebrezze sent to you on August 30th, 1963. He said:

"Dear Mr. Wall:

"This is to acknowledge receipt of your letter of October 18th enclosing the news item from the

Lawrence Tribune of September 26th.

"First off, may I say that I fully appreciate your concern over this news story. In the interest of accuracy, however, I am enclosing a copy of the news release which was issued by our Department in connection with calling of the enforcement conference on pollution problems in the Merrimack and Nashua Rivers.

"You will note from a review of this release that while it makes reference to a number of the pollution problems which led to the calling of the conference it does not contain any statement by me as to the condition of the River nor does it characterize the pollution situation in the terms attributed to me in the clipping from the newspaper. I assure you that our Department has not made a final judgment on the pollution situation in the Merrimack and Nashua Rivers. Reports and surveys available to us do indicate a number of pollution problems in the area which impair the water's use. The purpose of the conference which we have scheduled is to review these problems in depth, to consider what is being done to abate them and to determine what additional steps might be taken.

"Because of your deep interest in the problems of the City of Lawrence, I am certain that the conferees would welcome your participation in their scheduled meeting and would welcome any and all proposals you might have as to how the pollution problems of the Merrimack River could be better and more quickly met to the benefit of all concerned and with a minimum of detriment to the communities along its banks.

Sincerely,
/s/ Anthony J. Celebrezze,
Secretary, Department of
Health, Education, and Welfare.

SENATOR WALL: Here is the statement right here. "Merrimack River filthy, says Secretary Celebrezze." There it is right there.

MR. STEIN: Thank you. I think the record is clear on that.

SENATOR WALL: Yes, it is clear. Now, what else do you want?

MR. STEIN: Are there any further comments or questions?

(There was no response.)

MR. STEIN: Thank you, Senator.

W. X. Wall

(The incorporation of the following document in the record was requested by Senator Wall.)

RESOLUTIONS MEMORIALIZING THE CONGRESS OF THE UNITED STATES TO ENACT LEGISLATION EXTENDING FINANCIAL AID TO THE COMMONWEALTH OF MASSACHUSETTS FOR PURIFICATION OF THE WATERS OF THE MERRIMACK RIVER.

February 5, 1964

Whereas, The pollution of the waters of the Merrimack river continues to be a danger to the health and welfare of all the inhabitants of the Merrimack River Valley; and

Whereas, The joint effort and financial assistance of the Federal and State governments are required in order to accomplish the monumental task of purifying the Merrimack river; now, therefore be it

Resolved, That the General Court of Massachusetts respectfully urges the Congress of the United States to enact legislation extending financial aid to the Commonwealth of Massachusetts for the purification of the waters of the Merrimack river; and be it further

Resolved, That copies of these resolutions be sent forthwith by the Secretary of the Commonwealth to the President of the United States, to the presiding officer of each branch of Congress, and to each member thereof from this Commonwealth.

Senate, adopted, January 30, 1964

THOMAS A. CHADWICK, Clerk

House of Representatives, adopted in concurrence, February 4, 1964

William C. Maiers, Clerk.

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MR. STEIN: Mr. Taylor, will you proceed, please?

MR. TAYLOR: Representative Albert A. Zabriskie, former Mayor of Newburyport.

STATEMENT OF ALBERT H. ZABRISKIE,
REPRESENTATIVE, 1ST ESSEX DISTRICT,
NEWBURYPORT, MASSACHUSETTS

MR. ZABRISKIE: Mr. Chairman, Members of the Committee:

I am Representative Albert H. Zabriskie, 1st Essex District, Representative to the General Court of Massachusetts.

I would suggest to the patient listeners here that I do not intend to read, or I would be here for a year. I wish to take this opportunity to thank the Conference Committee for extending to me the right to be heard. The cooperation of the Commonwealth of Massachusetts and the Federal Government of the United States has not been good, but excellent! I appear as former Mayor of the City of Newburyport (1960-63), and as Representative to the General Court of Massachusetts, 1st Essex District.

I am here seeking justice.

I fully realize that this committee is meeting at the request of his Excellency Endicott Peabody, Governor of Massachusetts, and Mr. Anthony Celebrezze, Secretary of the Department of Health, Education, and Welfare.

Although I was one of the mayors who, with Mr. Celebrezze, was on President Kennedy's Association throughout these United States, I have never met the man, nor have I any letters from the gentleman.

The Massachusetts Legislature in the year 1962 passed two resolves: Chapter 85, which set up a special commission to investigate and study the creation of a Merrimack River valley abatement district, and Chapter 95, an investigation and study by the Department of Public Health, relative to the preparation of plans and maps for the disposal of sewage in the Merrimack River valley. (Massachusetts)

A. H. Zabriskie

I. Chapter 85

The General Court of Massachusetts was represented by Senator James P. Rurak, and Representatives Albert H. Zabriskie, John C. Breanahan, and John F. Dolan, having been appointed by President of the Senate and the Speaker of the House of Representatives.

I have here, gentlemen, on the copy, the members who were appointed, members from the Massachusetts Department of Public Health, Department of Natural Resources, Water Resources Commission, and the various representatives from the cities and towns up and down the Merrimack River. I will read them:

Department of Public Health - Worthen H. Taylor, Division of Sanitary Engineering.

Department of Natural Resources - Charles H. W. Foster, Commissioner, 15 Ashburton Place, Boston.

Robert L. Yasi (Alternate) 15 Ashburton Place, Boston,

Water Resources Commission - Clarence I. Sterling, Jr., Director, 73 Tremont Street, Boston.

Malcolm E. Graf, Director, 73 Tremont Street, Boston.

Harold J. Toole (Alternate) 20 Somerset Street, Boston.

Merrimack River Valley Sewerage Board - Sherwood J. Tarlow, Chairman.

Thomas A. Ercoline, Chairman, 145 Murray Street, Medford.

Amesbury - Richard S. Rand, 14 Merrimac Street.

Andover - Joseph A. McCarthy, 26 High Street.

Billerica - Armand E. Provost, Jr., 143 Middlesex Street, North Chelmsford.

Chelmsford - Edward L. Ryler, Jr., 155 Boston Road.

Dracut - Robert C. McAnespie, 5 Middle Street.

Groveland - Robert Richards, 16 Elm Park.

Haverhill - Fred C. Basile, Superintendent of Parks, Room 20, City Hall.

Lawrence - Joseph E. Twomey, 60 Coolidge Street.

Lowell - George McDonough, Engineering Department, City Hall.

Merrimac - George Stevens, Birchmeadow Road.

Methuen - Frank B. Law, Agent, Health Department.

Newburyport - Joseph McLoughlin, Agent, Board of Health.

North Andover - Joseph D. Sullivan, Robert M. Wood, Board of Public Works.

Salisbury - John F. M. Lambert, 105 High Street.

Tewksbury - John F. McCormack, Main Street.

Tyngsborough - Phillip Bagley, Farwell Road.

Westford - Lucien J. Menard, 15 Hawthorne Avenue, Nabnasset.

West Newbury - Hugh Cawley, Middle Street.

II. Chapter 95

The Massachusetts Department of Public Health, representing the Commonwealth of Massachusetts engaged Camp, Dresser and McKee, consulting engineers, 18 Tremont Street, Boston 8, Massachusetts, at a fee of $80,000.

This report on Pollution Control for the Merrimack River is dated December, 1963 and was signed by Thomas R. Camp.

That is this lovely looking document right here that looks so impressive, and, gentlemen, I trust your Committee will make this report, one of many numerous ones, as you know, Mr. Chairman, that were so ably brought to the attention of Mr. Taylor, who has lived with this for probably a lifetime -- I trust that this will be made as a part of the record of this meeting.

MR. STEIN: Do you want to enter that as an exhibit? We haven't gotten it yet.

MR. ZABRISKIE: Mr. Chairman, I will say this: I have the Mayor of Newburyport present here with me, and it was my intention after the meeting, because these reports are rare or scarce, to turn it over to the Mayor of Newburyport, the present Mayor, George H. Lawler, Jr., and he in turn can consult with his City Solicitor, if the Mayor has no objection.

MR. TAYLOR: You keep it, and I will give them one.

MR. ZABRISKIE: Wonderful. All right, Mr. Chairman?

MR. STEIN: Thank you.

MR. ZABRISKIE: Yes, sir. So that will be part of the record, Mr. Chairman?

MR. STEIN: Yes. It will be entered as an exhibit, not printed in the record.

MR. ZABRISKIE: That's all right, fine.

(The exhibit above referred to will be found in the files of the Department.)

MR. ZABRISKIE: Existing Pollution.

Now, I'm not an attorney, I'm not an expert, but I sure have heard from several today that the Merrimack River is an open sewer or a cesspool.

The Lawrence Experiment Station was one of the early leaders in the United States in the development of methods for treating sewage. Yet half a century after this pioneering work was started at this location, the neighboring communities along the Merrimack River in the study area do not treat their sewage before discharging it into the Merrimack River. Millions of gallons of highly polluted industrial wastes pour daily into the Merrimack. Domestic sewage from

A. H. Zabriskie

the industries and from the sewers serving the municipalities in the area were also discharged without treatment into the stream.

Bacterial pollution, and this terminology comes from the experts and not from me, is largely the result of the addition of domestic sewage to the stream. Sewage not only contains common bacteria, but also bacteria from disease carriers and contagious disease hospitals.

Senate Document No. 550 of Acts of 1947 is the report of the Joint Board established to investigate, study, and to prepare plans and maps for the disposal of sewage in the Merrimack River Valley. This Joint Board engaged the services of Camp, Dresser and McKee, consulting engineers. What progress have we made during this time?

City of Newburyport

The City of Newburyport made application for Federal Funds under the Accelerated Public Works program.

May I pause for one minute to congratulate the Senator from Massachusetts and the Congressmen from Massachusetts, especially those who voted for this type of plan. There were some Congressmen from Massachusetts who did not vote for it, who, on occasion, take bows when a Federal grant is announced, and I am not referring to the Congressman from Lowell. I am quite sure he voted for the program.

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In June, 1963, the sewage disposal project commenced. The contracting firm of Richard White and Sons, West Newton, Massachusetts, and the engineering firm of Whitman and Howard, Inc., are being retained by the City of Newburyport. The project at the present time is 65% + complete and the actual completion date is July 1964.

The citizens of Newburyport expect and demand that the Massachusetts Department of Public Health and the Federal Department of Health, Education, and Welfare carry out to the letter of the law the Federal Water Pollution Control Act, Public Law 660, 84th Congress, and its more recent amendment, Public Law 87-88 of 1961.

Gentlemen, we have in the New England states some of the greatest leaders in the history of the Congress of the United States. We have a Senator from Maine by the name of Muskie.

I understand a meeting is going to be held in the State of Maine, and I am going to make every effort to attend that meeting.

We have in the Connecticut River an outstanding Senator by the name of Ribicoff, who has a problem in his state. And I have no quarrel with the State of New Hampshire, gentlemen, if any of their members are present here. I have visited the State of New Hampshire at my own expense, and I have seen some actual projects that are in the works or in operation concerning sewage disposal.

It is amazing to me that in a State such as Massachusetts, which prides itself -- I do -- on having the greatest halls of education, schools of education in the world, leaders in health, and yet, two years ago, in the year 1962, I travelled to the nation's capitol in Washington, D. C., visiting our Federal agencies, and thank God we have them, and I found out for the first time a term that I had never heard before in my life, and the term is "hepatitis." Just recently in one of the Boston papers I saw a number that I didn't bother clipping out, because sometimes it isn't accurate to quote from newspapers, in excess of 2500 cases of hepatitis.

Gentlemen, I kid you not. In the State of Connecticut, within the past two weeks there was an outbreak of hepatitis.

So, today as I sat here, and some of the gentlemen have been shaking their heads and a few have been doing a little politicking, and, of course, putting the old bite on, Mr. Chairman -- I know that you are familiar with these tactics. Being in politics for fifteen years and enjoying it, I am aware of it.

So, let me say this: I have heard about water skiing, I have heard about boating, I have heard about swimming, I have heard about fish. They are all fine, all in their proportionate respective positions and places. The thing I want to bring out here today is water. It doesn't take any genious to figure this out. All you have to do is read the papers occasionally. I have right here, the progressive State of Washington, the Pacific Northwest's largest city is in the midst of a $125,000,000 sewerage disposal program -- and that isn't peanuts, realize that -- which has been described by John Daly -- he's the fellow who is on television -- as the best water pollution control program of any metropolitan area in the United States, and I think they should be proud. This 250-man construction job is designed to meet the metropolitan projected requirements for the next fifty years.

Now, this isn't yours truly sounding off. This is from the Construction Craftsman, January 1964, so it is quite current.

Of course, I realize that money is essential and necessary. I come from a family of eight children. I never got anything for nothing in my life that I didn't have to work for.

Newburyport in Massachusetts has a population of 14,000 people. My people in Newburyport town are for a pollution plan, but we are doing it. We have the same problems. Schools -- nobody wants to build schools, especially elderly people. They want to build elderly housing projects. We have done that with the Federal help, which I am grateful for. We have built a million dollar addition to the high school, but we have the same water, sewerage, welfare -- name it, we've got it, the same problems.

And when it comes to estimated costs, who knows? Not even the experts. They can estimate, but they are only estimates. In my city, the cost of my project or the city's project, rather, was $1,400,000. It came in for a little less than $1,200,000, and, Mr. Chairman, the generosity of the Federal Government to my municipality was 50 per cent of the total cost of the project.

This year in the Massachusetts Legislature, I filed with other members of both parties, Senators and Representatives, a bill that the Commonwealth would participate up to 20 per cent of the cost of a project, and I publicly commend the State of New Hampshire for increasing their amount from 20 per cent to 30 per cent in the last session of their legislature. I think that is correct. Isn't that true?

MR. HEALY: Yes.

MR. ZABRISKIE: So we are making progress. I have no quarrel with them at all.

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Of course, Mr. Chairman, being well versed in this type of procedure and dealing with people with pressures and what not, politics enters into this -- there is no question about it -- and being a community of 14,000 souls at the mouth of the Merrimack River, and living in a country where the individuals recognize, any individuals, any Americans -- I would say this: That the referendum that was stated by the gentleman who preceded me, Senator Wall, happened in the year 1947, and that's history, and I trust, ladies and gentlemen, that history does not repeat itself.

I went to Washington, and I found out two things. One was hepatitis. The second thing was that I became familiar with the Water Pollution Act of the Federal Government of 1961. So it was well worth the trip.

Gentlemen, I don't want to take too much of your time. I have a short report here about plans in Newburyport, and I have here a letter, and many clippings from the papers, and many experts sounding off.

Mr. Chairman, if I can beg your indulgence for just a minute. A motion to recess the hearing, what does that mean? We are not trying to be smart. What does that mean?

MR. STEIN: That means we would recess this and hold another session, as I understand, and determine after a further study whether an appropriate time has been scheduled.

MR. TAYLOR: It would be to come forth with a definite time schedule for the compliance of each community and industry.

MR. ZABRISKIE: Let me put it this way then: How much of a time factor is involved?

MR. STEIN: You understand, Mr. Zabriskie, that this was just a proposal and not a conclusion of the conference yet. This is Mr. Taylor's proposal, and if he wants to speak on it, he can.

MR. ZABRISKIE: Well, Mr. Chairman, I would like to get the answer now, if it is possible. I think it is a reasonable question.

MR. TAYLOR· Well, what the Massachusetts Department of Public Health would like to recommend is that it be given time to further study the possibilities of enactment of your bill for State aid, which the Governor has authorized me to say he was interested in. He didn't promise me that he would work for it, but he said he was very much interested in it, and the possibilities of further monies under the Accelerated Works Program, and also some technical details relative to the ability of certain communities in the Merrimack River Valley to pay, and as soon as these figures were available, this information were available, the Department would try to come up with a schedule of compliance which it would submit to the United States Public Health Service, which in turn does have the authority to reconvene a conference of this kind in order to consider whether the schedule was adequate or not.

The Department, however, does not intend that it would do nothing except come forth with a program of scheduled abatement during the period that is given; that the Department would go ahead with the program during this period just as energetically as it would otherwise, but it cannot at this moment say that certain cities, towns and industries must have completed works by such and such a date, without further knowledge of the financial situation, particularly with the Accelerated Public Works, and so on.

MR. ZABRISKIE: Thank you. Mr. Chairman, may I ask this question, and then I will conclude?

MR. STEIN: The floor is yours.

MR. ZABRISKIE: That is, that within the confines of Massachusetts, that 10 per cent of the total area of Massachusetts has a pollution problem, of which 7 per cent is in the Merrimack River Valley?

MR. TAYLOR: This is true, population-wise.

MR. ZABRISKIE: That's true. Well, I want that as a matter of fact, Mr. Chairman, and I would like to have that spread upon the record.

I would also like to have the remark that was made previously, that the pollution in the Merrimack River has been reduced 70 per cent -- that is true to a point, but it isn't true, if you can follow me on that one.

So, Mr. Chairman, I thank you very kindly for your indulgence. I never thought I would ever see the day that a Polish gentleman by the name of Zabriskie would ever appear in Faneuil Hall.

Thank you.

MR. STEIN: Thank you. By the way, I do think with reference to your last statements here, that has been put into perspective somehow by Mr. Knox's statement. He indicated that the programs, as I recall it, for New Hampshire would have amounted to $40,000,000, and for Massachusetts, how much?

MR. KNOX: 140.

MR. STEIN: 140, so assuming a 70 per cent reduction, if we did, if the Interstate agency and the States come up with a $140,000,000 program, I would assume there is still a little work that has to be done.

MR. ZABRISKIE: Yes. I would say this, Mr. Chairman, another remark.

You mentioned Mr. Knox. Mr. Knox has been working, very ably working in his department for years, and when we broke ground in Newburyport -- the regular typical thing, cutting ribbons and digging holes and what not -- it was a dream that he was trying to realize, or finally realized after forty years of being in the business.

Our most important product is progress. We proceed, but very slowly, Mr. Chairman.

MR. STEIN: Do you have any comment, Mr. Rogers?

MR. ROGERS: I just wondered on this 70 per cent reduction, was there some confusion here? The 70 per cent reduction we speak of was the reduction in organic loading. The bacterial pollution has actually increased since 1946.

MR. ZABRISKIE: One thing, too. I noticed here this chart is quite graphic, "Estimated Bacterial Load." Of course, we don't have too many of those studies in the Merrimack River, but on the next page it states that the four largest individual bacteria loadings into the Merrimack River came from Lowell with 22.7 per cent, Lawrence with 17.7 per cent, Manchester with 15.6 per cent, and Haverhill with 11.1. I don't say this.

But that is filth. I don't care how you figure it. This is a publication by the Division of Water Supply and Pollution Control, Public Health Service. So there it is, gentlemen. Cut it any way you want to.

Thank you very kindly.

MR. STEIN: Pardon me. I just have one more question. You are the lower end of the river.

MR. ZABRISKIE: I'm on the wrong end of the stick, yes, sir.

MR. STEIN: You have a treatment facility that is going in. When that is completed, if the other communities upstream don't put in treatment facilities in the near future, how are you going to abate pollution around Newburyport?

MR. ZABRISKIE: Well, I would place my trust, Mr. Chairman, in the Federal Government, that since 1961, with the Water Pollution Control Act and with the assistance of the Massachusetts Department of Public Health, that that could be resolved.

I don't have all the answers, Mr. Chairman. If I brought in a book from the Legislative Research Council of Massachusetts -- when I made the request, I didn't realize it was such a project. It would take them three months to compile a stack of books probably three feet high.

I only have a few here. These are only the more recent studies, as of probably the last year, but I would say we have a very able Mayor and a very able City Solicitor.

MR. STEIN: Thank you.

MR. ZABRISKIE: Thank you, Mr. Chairman. I have handed in two documents I would wish considered as part of my statement.

MR. STEIN: All right.

(The following documents were presented by Mr. Zabriskie for incorporation in the record.)

OFFICE OF THE MAYOR
CITY HALL
CITY OF NEWBURYPORT
MASSACHUSETTS

July 29, 1963

Chairman and Members of Board of Selectmen
Town Hall
Merrimac, Massachusetts:

Gentlemen:

I wish at this time to advise you that the City of Newburyport has commenced the construction of sewer treatment facilities, including necessary pumping stations, force mains, interceptor sewers and sewage treatment plant. The cost of these facilities is approximately $1,100,000. The actual construction of this project was commenced during June of this year by the contracting firm of Richard White and Sons, West Newton, Massachusetts. The firm of Whitman and Howard, Inc. is serving as consulting engineers for this project. In undertaking this sewer project the City of Newburyport has taken positive action to alleviate the serious pollution condition now present in the Merrimack River and to effect a cleanup of its section of the River.

As members of governing bodies of communities bordering the Merrimack we are all aware of the severe health problems which presently exists due to the presence of raw sewerage in the River. We in Newburyport feel that our treatment project will not only prevent the spread of disease but will greatly enhance the economic and recreational value of the Merrimack River.

In undertaking this project the City of Newburyport has sought to comply with the rules and regulations of the Massachusetts Department of Public Health and the provisions of the Federal Water Pollution Control Act which make it mandatory for each community to eliminate its pollution condition.

I know you are as interested as I in bringing about the total elimination of pollution in the Merrimack River. I would be most happy to inform you of the City of Newburyport's experiences to date in the planning and construction of our Sewer Project.

If I can be of any assistance please do not hesitate to contact me.

Sincerely,

Albert H. Zabriskie, Mayor.

THE COMMONWEALTH OF MASSACHUSETTS

Report of The Department of Public Health For An Investigation And Study By The Department of Public Health Relative To The Preparation Of Plans And Maps For The Disposal Of Sewage In The Merrimack River Valley.

December 4, 1963

To the Honorable Senate and House of Representatives.

The Department of Public Health, in accordance with the provisions of Chapter 95 of the Resolves of 1962, herewith respectfully submits its report, together with that of its Consulting Engineers, Camp, Dresser and McKee, for an investigation and study relative to the disposal of sewage and other liquid wastes in the valley of the Merrimack River. Chapter 95 of the Resolves of 1962, provides as follows:

Chap. 95. RESOLVE PROVIDING FOR AN INVESTIGATION AND STUDY BY THE DEPARTMENT OF PUBLIC HEALTH RELATIVE TO THE PREPARATION OF PLANS AND MAPS FOR THE DISPOSAL OF SEWAGE IN THE MERRIMACK RIVER VALLEY.

Resolved, That the Department of Public Health is hereby authorized and directed to consider and report a plan for the disposal of sewage and other liquid wastes in the valley of the Merrimack River in the cities and towns of

Amesbury, Andover, Billerica, Chelmsford, Dracut, Groveland, Haverhill, Lawrence, Lowell, Merrimac, Methuen, Newburyport, North Andover, Salisbury, Tewksbury, Tyngsborough, Westford and West Newbury. In the course of its investigation and study, said Department shall consider the contents of Senate Document No. 550 of 1947, "Report of the Joint Board established to investigate and study, and to prepare Plans and Maps for, the Disposal of Sewage in the Merrimack River Valley." Said Department may expend for such purposes, such sums as may be appropriated therefor to employ such engineering consultants and other assistants as may be necessary to carry out the objectives of this resolve. Said Department shall report from time to time its findings and recommendations, if any, together with drafts of legislation necessary to carry such recommendations into effect, by filing the same with the clerk of the House of Representatives on or before December fourth, nineteen hundred and sixty-three.

Approved May 22, 1962.

The sum of $80,000 was provided under item 2002-27, Chapter 791 of the Acts of 1962, to retain consulting engineering services.

The Joint Board, consisting of the Department of Public Health and the Merrimack River Valley Severage Board, created by Chapter 446 of the Acts of 1935, prepared a report consisting of plans and maps for the disposal of sewage in the Merrimack River Valley under the provisions of Chapter 62, Resolves of 1945. That report is contained in Senate Document No. 550 of 1947. The Joint Board retained Camp, Dresser and McKee, Consulting Engineers, to prepare the engineering aspects of that report. At that time, no city or town on the main stem of the Merrimack River in Massachusetts was served by a sewage treatment plant. The economy of the area was largely based on textiles, cotton and wool. Industrial wastes with few exceptions were discharged without treatment to the Merrimack or its tributaries.

Senate 550 of 1947 reported on the wastes discharged to the Merrimack River in Massachusetts, the quality of the waters of the stream and methods available to abate the pollution. It recommended the creation of a Merrimack River Valley Sewerage District for the purpose of constructing, maintaining, and operating sewerage works in the Merrimack River Valley. It proposed the construction of regional sewage treatment facilities to serve the Lowell metropolitan region, the Lawrence metropolitan region, the Haverhill metropolitan region, the town of Amesbury, the town of Salisbury, and the city of Newburyport at an estimated cost of $27,381,100.

Legislation to create the Merrimack River Valley

Sewerage District was enacted as Chapter 653 of the Acts of 1947. Section 18 provided that the Act would be submitted at the biennial state election in the year 1948 to the registered voters of the cities of Lowell, Lawrence, Haverhill and Newburyport, and the towns of Amesbury, Andover, Billerica, Chelmsford, Dracut, Groveland, Merrimac, Methuen, Newbury, North Andover, Salisbury, Tewksbury, Tyngsborough and West Newbury on the ballot to be used in said cities and towns, inthe form of the question, "Shall an act passed by the general court in the year 1947, entitled 'An Act Establishing the Merrimack River Valley Sewerage District for the purpose of constructing, maintaining and operating sewerage works in the Merrimack River Valley' be accepted?" The vote of the voters of the area was strongly in the negative, and thus the act became null and void.

The textile industries began to leave New England and the economy of the Valley became largely one of electronics, atomic development, missiles, and rockets. In this manner industries having little or no liquid industrial wastes replaced the wet textile industries. Domestic sewage from municipalities and industry continued to discharge to the Merrimack River. Only the village of North Billerica in the town of Billerica, the village of Ballardvale in the town of Andover, and Billerica Gardens in Billerica were served by sewage treatment plants by the time of the passage of Chapter 95 of the Resolves of 1962.

Nuisance conditions in the river were observed during periods of low flow. The bacterial contamination was sufficient to prevent its use for many recreational purposes. The harvesting of shellfish was prohibited. The fresh water resources of the Valley were inadequate, and it had been found necessary to take the waters of the river for water supply purposes for the city of Lawrence and the town of Methuen. Already the city of Lowell was constructing filtration works to make safe and potable these waters for its principal source of public supply. The town of Billerica was taking the waters of the Concord River, a tributary of the Merrimack, as its source of water supply. Additional sources of water supply are presently needed for other cities and towns in the Valley and the most generally available source is the Merrimack River.

The Department of Public Health recognized the need to abate the pollution of the river and thus actively supported two proposals introduced by Representative Albert H. Zabriskie, Mayor of the city of Newburyport. House 2803 provides for the creation of a Merrimack River Valley Pollution Abatement District with authority to construct, maintain, and operate pollution abatement facilities in the Merrimack

River Valley. The proposal was amended and now is Chapter 85, Acts of 1962, to provide a special study commission. House 2572 was enacted to become Chapter 95 of the Resolves of 1962, authorizing the present study.

The Department of Public Health carefully considered the excellent consultants in the Commonwealth to prepare the consulting engineering report authorized by Chapter 95 of the Acts of 1962. Believing that Camp, Dresser and McKee were in a position, by reason of its earlier report, to carry out the present study most efficiently and expeditiously, that firm was retained. The engineering report is appended and made a part of this report of the Department.

The contract between the Department and the Consulting Engineers provided that the Consultants should prepare a report including but not limited to the following items:

1. Review and check of all pertinent data collected for the 1947 report.

2. Collection and analysis of additional data from local, state and Federal agencies, including engineering reports, maps, local sewer plans and profiles, available sewer gagings, river discharge data, tidal information, analyses of river water, shellfish data, analyses of sewage and industrial wastes, data from previous industrial wastes surveys,

water consumption and population data, etc.

3. Study of municipal sewerage systems, including existing sewer plans, location of outlets, sizes and elevations, measurement of tributary areas, location of industrial plants and outlets.

4. Gaging and sampling typical main outlet sewers, municipal and industrial. Recording gages will be installed in key manholes to assist in estimating infiltration, average dry weather flow and variations in dry weather flow, and storm water flow.

5. Industrial waste surveys, including measurement and sampling of wastes where desirable.

6. Study of population, water consumption and industrial wastes data, and estimates of present and future sanitary, industrial, infiltration and storm water flows from all pertinent areas.

7. Stream pollution studies and degree of treatment required. Effect on river of various methods of treatment of sanitary sewage and industrial wastes, including effect of overflows of sewage during periods of rainfall. Recommendations for classification of river.

8. Necessary field surveys and subsurface investigations.

9. Preliminary designs of intercepting sewers,

overflows and regulators, sewage pumping stations, sewage treatment plants and all necessary appurtenant works to provide adequate sewage and industrial waste disposal for all of the communities listed hereinbefore. Various alternate plans will be studied to achieve the most economical overall plan.

10. Estimates of cost of construction and operation, together with recommendations for assessing costs and financing the proposed works, taking into account Federal grants which may be available.

11. Preparation of report containing findings and recommendations. The report will contain suitable maps, plans, graphs and tables.

The Department has cooperated in the present study, opening its files of analytical data relative to the industrial wastes and river water quality. It has conducted special sampling programs along the entire length of the study area and has collected data relative to the quality of storm waters discharging to the river.

Since the present study was inaugurated there have been several important events. The city of Newburyport had prepared plans for the construction of a sewage treatment plant to serve the entire sewered area of the city under a non-interest bearing loan from the Housing and Home Finance

Agency. These plans had been approved by the Department. Newburyport accepted a Federal Grant in an amount of 50 per cent of the cost of construction of such works under the Accelerated Public Works program and started construction of treatment facilities, pumping stations, and force mains in June of this year. The works will provide primary settling, sludge digestion, and chlorination. The works are scheduled for completion early in the summer of 1964.

The town of Billerica has retained consulting engineers to prepare plans for the construction of pollution abatement facilities. The preliminary report has been approved and construction plans are nearing completion. The following municipalities have retained consulting engineers to prepare reports and plans relative to pollution abatement; however, in certain instances there have been delays in financing.

Westford
Chelmsford
Lowell
Dracut
Billerica
Tewksbury
Lawrence
Methuen
Andover
North Andover
Haverhill
Amesbury
Salisbury

The Federal Water Pollution Control Law is embodied in Public Law 660 of the 84th Congress. Section 1 states that the primary reponsibility for water pollution control rests in the states. There are three major provisions:

1) Program grants to state and interstate agencies for the administration of water pollution control programs.

2) Grants-in-aid to states, cities, towns and other governmental agencies to assist in the construction of pollution abatement facilities.

3) Federal enforcement of pollution abatement programs under certain circumstances on interstate and intrastate streams.

Of particular interest are the grants-in-aid program and the Federal enforcement provisions of the act. The appropriations for grants-in-aid is $100,000,000 for the fiscal year 1964. Of this amount $2,123,850 has been allocated for Massachusetts projects. There is authorization for similar appropriations only for the fiscal years ending June 30, 1965, 1966, and 1967. Grants-in-aid are limited to 30 per cent of the construction cost, or $600,000, whichever is the lesser, for each project. However, the ceiling is 30 per cent of $2,400,000 per regional project for projects serving several cities and towns. The estimated cost of the initial phase of the proposed pollution abatement projects to serve the Merrimack River communities is $94,575,000.

Thus, it appears that Federal grants-in-aid under P.L. 660 offer relatively small incentive.

More recently there has been further assistance in certain instances. Under the provisions of the Accelerated Public Works program the Federal Government has provided funds, up to 50 per cent of construction cost in Massachusetts, to assist cities and towns in areas of surplus labor in the construction of public works, including pollution abatement facilities. Funds for such purposes have been appropriated on two occasions, beginning in 1962. The city of Newburyport received advantage of these funds to construct its treatment plant and the town of Andover to enlarge its sewerage system. Whether or not there will be further appropriations for this purpose is not known, but certainly there is no assurance of such funds in the future.

The enforcement provisions of P.L. 660 are contained in Section 8 of that act. The Secretary of Health, Education, and Welfare is directed to hold a conference of the state and interstate water pollution control agencies and the Public Health Service upon the request of a governor or the water pollution control agency of any state, or upon his own volition if he has reason to believe that pollution of an interstate stream within one state affects the health and welfare of persons within another state. Following such a conference the Secretary may make recommendations to the state and interstate agencies relative to the abatement of pollution. If progress toward abatement is not believed to be adequate, the Secretary may hold a hearing and issue orders. Failure on the part of any pollutor to comply may be referred to a Federal Court to consider the entire matter and cause compliance if necessary.

A conference, the first step in the enforcement program, has been called by the Secretary of Health, Education, and Welfare on request of His Excellency, Governor Endicott Peabody, relative to the pollution of the interstate and intrastate waters of the Merrimack and Nashua rivers in Massachusetts and New Hampshire. This conference will be held in Boston, Massachusetts, on February 11, 1964.

The report of the Consulting Engineers, retained by the Department of Public Health, and contained in this report show definitely that the Merrimack River in Massachusetts is grossly polluted as a result of the discharge of sewage and industrial wastes from many sources within the Commonwealth.

Three of the larger cities in the Valley in Massachusetts, Lowell, Lawrence, and Haverhill, are served by combined sewers. Such sewers carry sewage and industrial wastes under normal dry weather conditions. During periods of heavy runoff they also carry drainage from streets, roofs, cellars, and many other sources. The flow in such sewers is increased many fold. To carry such combined flows to a sewage treatment plant would be impractical; separation of either sewage or storm water would be excessively costly in most instances. Thus it is most desirable to intercept the dry weather flows and convey them to a treatment plant and permit the flows of commingled sewage and storm drainage in excess of interceptor capacity to discharge through overflow structures to the river. Such combined sewage is heavily polluted and some means of treatment must be provided. The cost of providing works for the chlorination of storm water overflows in the greater Lowell, Lawrence and Haverhill districts is estimated at $46,000,000. The Department recommends that this portion of the pollution abatement program be deferred at the present time.

The sewerage systems of other sewered communities in the Valley are constructed on the separate plan. Only sewage and industrial wastes flow in such sewers, storm drainage being carried off by a system of drains discharging apart from the sewerage system to the river. In such instance no provisions need be made for the treatment of storm drainage.

The present study indicates that there would be little economic benefit to be derived from the creation of a single authority to construct, maintain, and operate all of the works necessary to abate the pollution of the Merrimack River in Massachusetts. Since the city of Newburyport is so far advanced in its abatement program and because no equitable basis of cost distribution has been advanced, the Department does not recommend the creation of any single authority to carry out a pollution abatement program.

The present studies indicate that sewage treatment facilities should be constructed as follows:

Newburyport	Primary treatment with chlorination
Salisbury	Lagoons or Primary treatment with chlorination
Ambesbury	Primary treatment with chlorination
Merrimac	Primary treatment with chlorination
Haverhill District	Primary treatment with chlorination
Haverhill	To District Plant
Groveland	To District Plant when it provides sewers
Lawrence District	Extended Aeration and chlorination
Lawrence	
Andover	
Methuen	
North Andover	
Lowell District	Extended Aeration and chlorination

Lowell	
Billerica	(See discussion below)
Chelmsford	
Dracut	
Tyngsborough	To Lowell District when sewers are provided
Tewksbury	A portion tributary to Merrimack River when sewers are provided to Lowell District
Westford	Originally to Lagoons but later possibly to Lowell District

The town of Billerica is located on the Concord River, a tributary entering the Merrimack River at Lowell. The river is formed at Concord by the confluence of the Assabet and Sudbury rivers. The flow of the river is such that there is insufficient dilution for the effluent of even the most modern and efficient facilities to treat the anticipated sewage and industrial wastes of the communities. Under such conditions it will be necessary to provide low flow augmentation for increased dilution of the effluent or carry the effluent to the Merrimack River. An alternate solution would be to convey raw sewage to the site of the proposed Lowell District facilities for treatment. However, the town of Billerica is so in need of a sewerage system at the present time that it appears desirable to proceed immediately with a plan to build treatment facilities on the Concord River without awaiting construction of works to provide low flow augmentation to the Concord River. To provide sufficient low flow augmentation will require the construction of at least two reservoirs. One is presently authorized under P.L. 560, the so-called small watershed act administered by the Federal Soils Conservation Service and the Division of Water Resources of the Commonwealth. Although authorized and funded it appears that an additional State appropriation may be necessary before this particular reservoir of the Su-As-Co project is constructed. The second reservoir would be constructed by the U. S. Army, Corps of Engineers. No authorization or appropriation is presently available. For these reasons the Department recommends that consideration be given by the town of Billerica to discharging its wastes to the proposed Lowell District treatment facilities.

The entire matter of administration of the pollution abatement program is the subject of a study by a Special Commission under the provisions of Chapter 85 of the Resolves of 1962. Recommendations and the draft of legislation to carry the same into effect will be presented in that report.

The Department of Public Health acknowledges with appreciation the services of its Consulting Engineers, Camp, Dresser and McKee, not only in the preparation of its reports but also for the generous assistance to the Department and the Special Commission created under the provisions of

A. H. Zabriskie

Chapter 85, Resolves of 1962. Especial appreciation is made to its Merrimack River Project Engineer, Mr. Ernest Leffel.

Respectfully submitted,

DEPARTMENT OF PUBLIC HEALTH.

Alfred L. Frechette,
Commissioner of Public Health.

Gordon M. Fair, B.S., Dr.Ing.

Paul J. Jakmauh, M.D.

Samuel Kovner

Ralph Sirianni

Charles F. Wilinsky, M.D.

Public Health Council.

MR. STEIN: For the next few moments, I would like to turn the chairmanship over to Mr. Rogers. Evidently, they have an acute crisis in Washington. They have four inches of snow, among other things.

MR. ROGERS: Mr. Taylor, do you want to continue with the other people?

MR. TAYLOR: Representative Cornelius Finnegan of Lowell. Mr. Finnegan is also the City Solicitor.

STATEMENT OF CORNELIUS T. FINNEGAN, JR.
CITY SOLICITOR AND STATE REPRESENTATIVE,
LOWELL, MASSACHUSETTS

MR. FINNEGAN: I am Cornelius Finnegan, Jr., appearing in my capacity as City Solicitor only, and not stating my opinion as a representative of the General Court.

I am appearing in behalf of the Lowell City Council, which took the position that they are opposed to any expenditure of funds for cleaning up the Merrimack River.

I would like to point out that the City of Lowell has a population of 93,000 people. It has recently been declared one of the four larges areas with largest unemployment in the United States. We have a $94 tax rate.

In listening to the presentation today, I was extremely impressed, but I thought, as all the people talked, that it is practically impossible for the City of Lowell to expend any large amount of money to abate the pollution nuisance.

I know that the Federal Government could probably come in and order the City of Lowell to abate the nuisance or to clean up the pollution, and with the shrinking population of Lowell and the large unemployment problem, it would be interesting to see how the City of Lowell would be compelled to abate the terrible pollution nuisance which exists in the Merrimack River.

One thing I will say as a State Representative: It is perfectly obvious to me, looking at the map and watching the flow of pollution bacteria from Massachusetts in the Nashua River into Nashua, in the State of New Hampshire, and then down into Lowell, and knowing that the State of New Hampshire has taken action and knowing that the State of Massachusetts has taken no action, it is unfortunate that there are so few of the State Representatives present at this meeting and so few State Representatives who receive the information which has been presented. And with the many problems which are presented to the State Representatives, many of them will not even know that this meeting was in progress, nor will it come to their attention.

It creates a big problem as to how this nuisance will be abated. I know that present here are many representatives of industry, who are very naturally opposed to any expenditure on the part of industry.

So, the final disposition of this problem, it seems to me, will be left up to the Federal Government. We are now in the process of urban renewal. We are tearing down parts of Lowell, trying to build it up. We have lost many of our industries. We are attempting to come back. But in my lifetime, with the exception of the war years, Lowell has been a depressed area. The only natural asset we have is the Merrimack River and the Concord River full of pollution.

I can remember as a boy swimming in the Concord River, and I don't imagine that it is cleaned up any more since the time I swam in it, until my mother found out and stopped me, and from observing it as I walk by, it hasn't been cleaned up to a great degree, even though many of the industries along its banks are no longer operating.

So, I would say to the conference here that for the City of Lowell, a great problem is presented to find finances to do our share, because it is obvious, with 93,000 people, and the raw sewage going into the Merrimack River heading down towards Lawrence and Haverhill and

Newburyport, that we present a tremendous problem to the pollution of the Merrimack River.

But my position is that I have been delegated by the City Manager of the City of Lowell by a vote of the City Council to oppose any action and to protest any action which would require the expenditure of money by the City of Lowell.

MR. STEIN: Thank you, sir. Are there any questions or comments?

(There was no response.)

MR. STEIN: Mr. Taylor?

MR. TAYLOR: Mrs. Bernard H. Flood of the Board of Directors of the League of Women Voters Club.

STATEMENT OF MRS. BERNARD H. FLOOD, MEMBER OF BOARD OF DIRECTORS, LEAGUE OF WOMEN VOTERS OF MASSACHUSETTS

MRS. FLOOD: I am Mrs. Bernard Flood. I am a member of the Board of Directors of the League of Women Voters of Massachusetts, and my responsibility on that board is as to the water resources.

The League of Women Voters is pleased to have this opportunity to meet with others who share our concern about the pollution of the Nashua-Merrimack Rivers.

League members in communities in this region have been most specific in outlining the facts of pollution. One city league reports:

> "Most of the city uses town sewers, but the sewerage is not emptied far enough out into the river to be completely carried out to sea. There are no swimming signs posted along the river with the police department given the responsibility of enforcing the ban. Boating continues to increase on this part of the river."

Another league whose town is a member of the Merrimack Valley District Pollution Abatement Commission reports that:

> "There are seventeen sites in the district where raw sewage is being dumped into the river."

In reply to the question, "What specific sites are there where raw sewage is being dumped into the river?"; another league replied "Every street."

At the same time in answering the query as to where the water came from for domestic use; leagues pointed out that two communities used the Merrimack River. Furthermore, other communities are looking toward to using the river for drinking water in the foreseeable future. A study made by the Central Merrimack Valley Planning District lists the river as one of the better methods of providing adequate amounts of clean water for future use. The simple fact is noted that the cleaner the water is, the less expensive it is to treat for domestic consumption. A significant statement by another league; that "of course, a good deal of swimming is done in the river, although it is warned against by the health authorities" points up the seriousness of the situation.

The fact of the pollution of the Merrimack River cannot be overstated. Officials and citizens of all the communities in the region have shown an increasing awareness and concern about the situation. Many public meetings have been held since this conference was called. Local officials have been most articulate in expressing their views on the matter. A league member from Lowell writes:

> "I attended a meeting, at which the pollution of the river was discussed. There seems to be unanimous agreement that the Merrimack River is badly polluted, but city officials and industry do not want to take on any expense that will send Lowell's already high tax rate any higher. This being especially so after being told that there was actually no menace to health."

The enclosed newspaper account of the meeting is vivid in emphasizing the point that officials were publicly decrying the high cost and were unwilling to back plans for pollution abatement. Yet we have the words of Mr. Worthen Taylor who spoke at this same meeting. He said:

> "People are demanding clean water. There are increasing problems of public health, especially as river water becomes a source of domestic water; and as more people contact the river water, through recreation and consumption, the potential for disease carrying bacteria increase."

There also seems to be an increase in the incidence of infectious hepatitis which some authorities attribute to reused river water. Furthermore, the impetus to sewage treatment plant building in the Merrimack valley came early in this century, when typhoid had been rampant and was traced to polluted water. The League of Women Voters does not wish to raise the spectre of disease. We have confidence that our public officials are protecting us. But we do think that under the circumstances, disease is an ever present danger.

Communities where officials had the foresight to build sewage treatment plants many years ago, are now plagued by the fact that the combined systems then in vogue, are obsolete and very expensive to rehabilitate. The report of Camp, Dresser and McKee points out that there are a number of ways to meet the problem. They selected a method which they feel has the most potential for success but there is still a $94 million price tag. Cost, apathy and reluctance to cooperate may keep the Merrimack Region from accepting and carrying out this recommendation.

Another league reports:

> "It seems that the solution to the problem will come only after massive public education. It is common knowledge that the river is polluted but it is taken for granted as a natural occurrence and is inevitable, like death and taxes."

The fact remains, however, that a great number of people are concerned. Responsible citizens are suggesting that the Federal Government assume a larger share of the cost. This seems especially relevant since much of the area has been described as depressed. Assistance from the state in the form of grants is also being proposed and supported by public officials and citizens as well. The League of Women Voters of Massachusetts recently testified in favor of House 435 which would provide state assistance of twenty per cent in addition to the Federal grant for sewage plant construction as well as other means of controlling pollution.

In closing I would like to quote from a letter sent to His Excellency Endicott Peabody informing him of the interest that the League of Women Voters has in pollution abatement. I quote:

> "To help local communities with these problems (sewage financing, etc.), the League of Women Voters continues to support the so-called 'incentive' program embodied in the Federal Pollution Control Act of 1956. We realize that this gives the Federal Government the right to require certain standards on the part of the states and communities participating and these have proven to be valuable requirements. For the same reason, we have welcomed the pollution control conferences on the Connecticut and Merrimack.

B. H. Flood

"We believe that local, state and national officials, can and must work together to provide clean water for our citizens. We recognize that the Federal programs have been most successful in providing the impetus to sewage plant construction. Statistics are readily available to bear this out and our own state officials have repeatedly asserted this to be the case. But the all too evident fact emerges that we have not even been able to maintain any semblance of progress against pollution. There is not enough being done with the limited funds available and we believe, therefore, the states must assume some of the financial burden.

"It appears that the time has come for our state to take a more active role in pollution abatement. We now have, as you know, of course, a state law against the pollution of water by municipalities or industries, which has been difficult to enforce because of the economic and political implications of such enforcement actions. The state officials involved need the backing of the executive if they are to fulfill their duties. They also need to have the assistance of financial programs for communities and industries for whom compliance would be a real financial hardship. Stronger state laws, stronger state enforcement, larger staffs, and state aid to municipalities for pollution control are necessary ingredients for a successful clean water campaign.

"In 1956, a Water Resources Commission was established by statute, and it became a functioning agency in 1959. Its purpose was the coordination of all matters relating to water. It has never been adequately financed and staffed, although excellent work has been done on the projects on which it has been able to work. This agency should be strengthened so that it can carry forward the really necessary task of water law codification, regional and river basin planning, collection of basic data, research and dissemination of information.

"We would like to suggest that you pursue the program for clean water most vigorously. We would like to assure you of our league interest in this and willingness to support legislation which will make this effective."

The League respectfully urges that every effort be made by all concerned to provide clean water for the Nashua-Merrimack River area.

MR. STEIN: Thank you very much. You know, there is one recurring theme that runs through all the statements, and that is that it is going to cost money, and where is the money going to come from.

The point is this: It is just a horrible fact that sewage treatment works, like highways, schools, hospitals, or anything else, cost money. This figure of $140,000,000 for Massachusetts was mentioned. If it is not taken care of and we follow the trend in the next decade or two without doing anything, it is going to cost much more on the day of reckoning. This is what happens.

It seems to me that we should put this into some kind of perspective. When you talk about 140 and 40, which is about $180,000,000 for a cleaning up of the entire Merrimack-Nashua system in New Hampshire and Massachusetts, just compare that with the amount of money it takes to build some super-highway or highway around the city for a few miles.

This is not meant to be depracatory of the highway program. That is needed. However, look at these comparative costs sometimes. It is true that these things do cost money and the money is going to have to come from somewhere. No one can wave a magic wand and say it can be done, but in our society where public works are needed, and really needed, the money has come forth.

MRS. FLOOD: I would like to say to that, the

League recognizes the fact that this is an expensive project, although not as expensive as some other projects.

We also feel that our State is one of the wealthier states, and we are pleased to know that in our own State law, it is possible for the Public Health Service to look into the financial status of communities, to see whether they can in fact bear the responsibility, and it has been, I think, usual that the communities can bear the expense.

I think there is a good deal of what they call poor thinking in this.

MR. STEIN: Off the record.

(Discussion off the record.)

MR. STEIN: Back on the record.

Thank you, Mrs. Flood.

MR. TAYLOR: Mrs. William H. Drury of Su-As-Co River Valley, who will be speaking for the League of Women Voters in that area.

Mrs. Drury.

STATEMENT OF MRS. WILLIAM H. DRURY, REPRESENTING THE SU-AS-CO RIVER BASIN GROUP, LEAGUE OF WOMEN VOTERS OF MASSACHUSETTS

MRS. DRURY: I won't read my entire statement, in the interests of time. I will just make a brief summary of it.

MR. STEIN: Do you have copies?

MRS. DRURY: I have copies.

MR. STEIN: That will appear in the record as if read, without objection.

MRS. DRURY: I represent the Su-As-Co River Basin Group of the League of Women Voters of Massachusetts. Our membership consists of 1300 women in 14 Leagues in the Sudbury-Assabet-Concord Basin, tributary to the Merrimack. We are grateful to Mr. Worthen Taylor of the Massachusetts Department of Health for the opportunity to present our opinions at this important conference.

The Sudbury-Assabet-Concord (Su-As-Co) River Basin is in a period of transition. Tremendous changes are taking place due to population, highway, and industrial growth, bringing new problems for the growing communities, many of which have not kept pace with the development. Figures from the Greater Boston Economic Study Committee illustrate the extent of the population increases in the region: comparative figures and projections for 1950-1970 indicate the United States as a whole will gain 35.2 per cent; New England 20.9 per cent; Massachusetts 17.5 per cent; Greater Boston 19.5 per cent; but our watershed 72 per cent.

The urbanization of the Su-As-Co River Basin has brought increased use and abuse of the rivers. Already heavily used for waste disposal, they will undoubtedly be used for this purpose to an even greater degree in the future. Waste-carrying is a beneficial water use when it does not interfere with other legitimate water uses. But to achieve maximum benefit from these valuable rivers, they must be clean enough to allow recreation, irrigation, and water supply uses as well as waste-carrying.

The three rivers are particularly suited for many forms of outdoor recreation. Three million people live within easy reach of them. With greater access and more facilities, additional recreational opportunities could be provided, but the water must be reasonably clean.

The need for additional sources of water supply for many of the towns along the rivers is becoming more urgent, and cleaner rivers could provide at least a limited future source. If additional storage works were available, this source could be very promising. At the present time only one town, Billerica, takes water directly from the Concord River. Water is still diverted from the upper watershed of the Sudbury River for M.D.C. water supply purposes.

Although Massachusetts has not legally adopted the classifications set up by the New England Interstate Water Pollution Control Commission, tentative classifications have been established for our rivers. The Sudbury is B to C, the Assabet D throughout, and the Concord C and then D below Billerica. We urge that full consideration be given to raising all these rivers to B eventually. Augmentation of the low flow of the rivers could help alleviate the pollution problem. The flood control dams along the Assabet (being constructed under the Watershed Protection and Floor Prevention Act) will not only serve their primary purpose but can also help in improving the low flow in the Assabet if additional funds are made available.

Maximum treatment of wastes at the source is also needed. Of the 36 communities partly or wholly in the Su-As-Co River Basin, thirteen have municipal sewage systems. Of these, seven dispose of effluent in our rivers -- Billerica and Concord on the Concord River (and Lowell to a certain degree); Hudson, Maynard, Marlborough, Shrewsbury, and

Westborough on the Assabet River. Two institutions, the Concord Reformatory and the Billerica House of Correction, also discharge effluent into the Concord River. Maynard, Marlborough and Westborough are planning for expanded systems in the near future, and Hudson and Concord have recently installed new treatment works. Five other towns which need new systems are Grafton, Hopkinton, Littleton, Chelmsford and Southborough. Two towns, Hudson and Shrewsbury, and the Billerica House of Correction have received grants for treatment facilities under the Federal Pollution Control Act of 1961.

At least sixteen industries also dispose of liquid wastes in the river basin. Two woolen manufacturing plants and a rendering plant in Billerica and a vinegar plant in Littleton dump untreated wastes into the rivers. Of the remaining twelve, one plant in Ashland creates a local problem on the Sudbury River, and several others cause pollution intermittently, but in general treatment is considered satisfactory. Several new industrial treatment plants have been built in the past few years. Massachusetts exempts industrial waste treatment plants from taxation.

In addition to lack of treatment or inadequate treatment from some of these sources of domestic or industrial waste, municipal dumps, pesticides, detergents, inadequate private waste disposal facilities, and even storage of salt for roads all contribute to the total basin pollution.

While there has been some improvement both by industries and towns, because population growth has resulted in increased use of the river, improvements have kept things from getting worse but have not been drastic enough to make any marked changes for the better. A notable exception to this is the definite improvement in the Sudbury River when Framingham and Natick diverted their sewage to the M.D.C. system, with the resulting low flow in the river augmented by clean reservoir water.

For any major improvements, more help will be needed from the State and Federal Governments. The towns are not presently equipped financially or administratively to undertake either immediate action or long-range comprehensive planning that will anticipate needs and problems in advance. The money available from the Federal Government is helpful but not enough for the struggling communities. The state agencies responsible for dealing with water pollution operate with a small staff and budget and must be given greater support to do their job. Massachusetts does not provide financial incentives to the communities for improvement or new construction of treatment facilities, although there is again legislation to achieve this purpose before the current legislature. We feel that direction and incentives must come from the State and Federal Governments, but at the same time the towns must do much more to assume their burden of responsibility in solving the pollution problem.

A concerted regional attack on the problem could put the communities in a much better position to assume this burden and to achieve basin-wide improvements. Towns should seriously consider the advantages of cooperating on sewage systems, water supplies, and town dumps. All levels of government must also cooperate to insure efficiency and broad planning. An example of a regional cooperative effort is the creation of a U. S. Fish and Wildlife Refuge on the Sudbury and Concord Rivers. This refuge will not only preserve the wetlands for wildlife, but will protect these areas of the river from further encroachment. At the same time the refuge will need to be protected from pollution from outside. The Assabet Flood Control dams are another example of cooperation at all levels of government.

The development of the area around Route I.495, now under consideration, presents another opportunity to do some advance planning in anticipation of needs that will certainly arise when the area becomes more highly developed. Five towns in this area now do not have even a municipal water supply system. Towns will need realistic advice about water requirements of potential industrial and housing developers, and many mistakes can be avoided if the planning is done in time. This is a specific area where leadership from State and Federal agencies is needed, and the towns must be willing to listen.

In this testimony we have spoken about the sources of pollution in the Su-As-Co River Basin, and pressures on the region which makes progress difficult. This small watershed of the much larger Merrimack Basin may not figure prominently in Merrimack pollution, but we feel strongly that both the Merrimack and its tributaries must be clean enough to allow their maximum use. The concluding paragraph of our recently published study of the Su-As-Co Basin says: "Some of the basic needs for effective pollution control in our basin bear repeating. Wider public understanding of the importance of clean water to meet growing demands; more planning to bring the problem into sharper focus; more public willingness to use tax money for its solution and more assistance to the communities to stimulate immediate action; more research on the treatment of wastes and water contaminants; and more enforcement of existing sanitary provisions to prevent pollution and punish violators."

This conference is a fine start toward vigorous and constructive action.

MR. STEIN: Thank you very much. Are there any questions or comments?

(There was no response.)

MR. STEIN: If not, thank you very much.

MR. TAYLOR: Mr. Donald Crocker.

STATEMENT OF DONALD M. CROCKER, CHAIRMAN, NASHUA RIVER COMMITTEE OF THE NATIONAL COUNCIL FOR STREAM IMPROVEMENT

MR. CROCKER: Mr. Chairman, Members of the Conference, Ladies and Gentlemen:

I am Donald M. Crocker, Vice President, Manager of Manufacturing of the Paper Division, Weyerhaeuser Company, (formerly, Crocker, Burbank & Co. Assn.). I am speaking here today as chairman of the Nashua River Committee of the National Council for Stream Improvement which represents seven paper companies owning mills located on the Nashua River and its tributary, the Squannacook.

On behalf of these companies, I wish to thank the Conferees for the invitation to appear at this Conference, which is concerning itself with the Merrimack River and its tributaries. Our paper mills are substantial users of the water of the Nashua River for manufacturing and waste assimilation purposes. For this reason, we have long concerned ourselves with the quality of the water of the Nashua. In our opinion, the State of Massachusetts has developed a sound program for maintaining and improving the quality of the river and assistance by the Federal Government is not needed at this time.

I would like to describe briefly the physical characteristics of the Nashua River, the importance of paper manufacturing to the economy of the Nashua River Valley, and the extensive water quality protection programs which the paper mills have undertaken in cooperation with the State of Massachusetts.

THE NASHUA RIVER

The Nashua River rises in North Central Massachusetts, and drains an area of 530 square miles. It passes through five communities in Massachusetts, flowing 47 miles from its origin to the New Hampshire border. From there, it flows 13 more miles to Nashua, New Hampshire where it empties into the Merrimack River. From its headwaters to the confluence with the Squannacook, a distance of 35 miles, only 9 miles of the land area on the river between Fitchburg and Lancaster are developed. The remaining 26 miles are mainly swamp lands, and the river is largely inaccessible in this area.

D. M. Crocker

The Nashua River is a relatively small stream and its water is used and reused by our mills, other industries and municipalities for manufacturing and waste assimilation purposes. Reservoirs constructed on the headwaters and dams located on the stream itself provide regulation of the stream's flow. Without these improvements, neither the paper mills nor other industries could operate on the river. Moreover, the dams and reservoirs are an aid in controlling potential floods in the valley.

Historically the Nashua River has been the scene of papermaking activities dating back to 1796. Since that time, paper mills have played an important role in the economy of the area. In 1963, the seven paper companies operated 16 mills on the river. These mills employed 3,203 people and had a combined payroll of $21,971,000. Moreover, the mills paid $1,329,000 in state and local taxes.

These mills require prodigious quantities of water to operate. Despite man-made improvements and careful use of the river's water, the stream flow occasionally drops to less than 50 cfs. Adequate dilution of effluents going into the river is difficult to achieve at this level. These known factors have caused our mills to spend a great deal of effort and money in attempting to further regulate water flow and to maintain and improve water quality.

D. M. Crocker

WATER QUALITY PROTECTION EFFORTS

As far back as 15 years ago, the paper mills cooperated with the State Department of Public Health and National Council for Stream Improvement in conducting surveys of the Nashua River. Temperature, dissolved oxygen levels (DO), biochemical oxygen demand (BOD), hydrogen ion concentration (pH) and suspended solids were carefully measured. In the years following the 1948 survey, the mills have undertaken the following corrective actions:

1. Several mills have suspended de-inking operations.

2. Saveall equipment has been installed.

3. Use of additives having a lower BOD potential has begun.

4. Fiber losses have been reduced by use of retention aids which hold more fiber in the products.

5. Several mills have been able to install external treatment facilities.

6. Tighter controls on the use of fresh water consumed have been instituted, thus reducing total effluents.

7. More internal waters have been used in the white water re-cycle for better charging and consistency regulation.

These and other water quality protective devices and expenditures on the Nashua have cost the seven companies in excess of $1,300,000.

Surveys conducted in 1962 and 1963 by the mills and The National Council for Stream Improvement in conjunction with the Massachusetts Public Health Department reveal that the actions taken and the expenditures made by the mills have achieved -

1. A 23% reduction in suspended solids, and
2. A 35% reduction in the BOD load of the Nashua River.

These accomplishments have been made during a time when total mill production has actually increased.

In considering the water quality of the Nashua, it must be admitted that paper mill wastes are by their very nature unsightly, due to the presence of inert pigments. At certain water flow levels and during certain times of the year, the paper mill effluents discharged into the Nashua depress the dissolved oxygen level and impose sizeable biochemical oxygen demand loads on the river. The dilution effect of the river is further curtailed by the diversion of water from the South Branch for public use outside the watershed, and this diversion removes from the Nashua River system all of the water from a drainage area of 117 square miles except a rather insignificant 12 million gallons per week which is allowed to enter the river from the South Branch. It is important to bear in mind, however; that paper mill effluents do not contain pathogenic bacteria, toxic substances, or other materials harmful to human health. Paper wastes cannot cause typhoid fever, hepatitis, or other diseases caused by raw sewage. Paper mill wastes are frequently expressed in terms of population equivalents. While this is a convenient means of expression it applies only to biochemical oxygen demand, and can be misleading because it tends to equate paper mill wastes with municipal sewage -- municipal wastes can cause public health problems; paper mill wastes do not.

Thus, while the Nashua River is an interstate stream it cannot be said that the use of the river by Massachusetts paper mills endangers the health of persons living in either Massachusetts or New Hampshire. Fishing in Pepperell Pond located 4 miles from the New Hampshire border, indicates that upstream wastes are stabilized before reaching this point. Our surveys do indicate an oxygen sag just before the New Hampshire State line, caused by a partial impoundment created by a broken dam in New Hampshire. Although the DO level improves after the river flows a short distance into New Hampshire, a program is underway to correct this condition and to provide a higher level of dissolved oxygen at the

State line. However, the Nashua River has little effect on the Merrimack because even at the most critical flow, the dilution ratio of the Nashua to the Merrimack river water is 1 to 10.

CONCLUSION

The Nashua River paper mills recognize the importance of water quality. We have made substantial progress in the last few years, and we intend to continue to maintain and improve the quality of the river. We will continue to cooperate fully with the Massachusetts Public Health Department to develop and implement a program to achieve these ends. It is obvious any such program which might cost the mills several millions of dollars must be accomplished over a reasonable length of time so that our communities and mills may remain competitive.

Thank you for your attention.

MR. PALAZZI: Did I understand you to say that New Hampshire is responsible for the pollution of the Nashua River?

MR. CROCKER: I didn't say that. There is a broken dam over the border that we are working on, that would help bring it up higher than it is now.

MR. PALAZZI: Excuse me. I thought you said it was the source.

MR. CROCKER: No, sir.

MR. ROGERS: Mr. Crocker, I think the paper companies actually have done a commendable job in their studies, but there are two or three points I would like to clarify.

You mention on Page 3 this 23 per cent reduction in suspended solids and 35 per cent reduction in BOD load. During this period of time, did you not shut down one of your de-inking plants?

MR. CROCKER: Two de-inking plants. As I said at the top, several mills had suspended de-inking operations. I can't tell you exactly because I don't know fully, but in our mills we did, some others did, but whether some others were suspended I don't know, but we did shut them down.

MR. ROGERS: Did you shut them down because of economic or paper quality reasons?

MR. CROCKER: Economic and pollution reasons. This is one of the biggest steps we could make to reduce the load on the river.

MR. ROGERS: Thank you. I don't know -- I don't have the exact figures here, but I think some of the comparisons show that there is a fairly big decrease in BOD, but as to suspended solids, if you discount this shutdown of the de-inking plants, actually there is some increase involved because of increase of production.

MR. CROCKER: No. I can say part of the reason for shutting down the de-inking plant was the hardest thing we were going to have to do in the long run, and some of the mills picked those to do first.

MR. ROGERS: All right.

MR. STEIN: Any other questions or comments?

(There was no response.)

MR. STEIN: Thank you very much, sir.

Mr. Taylor, do you have anyone else?

MR. TAYLOR: Mr. Walter B. French of Jackson Properties.

STATEMENT OF WALTER B. FRENCH, GENERAL MANAGER, JACKSON PROPERTIES, INC., LOWELL, MASSACHUSETTS

MR. FRENCH: My name is Walter B. French. I am Manager of the Jackson Properties in Lowell, comprising a million square feet of industrial floor space, with employment of between four and 5,000 people.

I had quite a paper prepared, but in view of the hour and the lateness, I am just going to go through the key points, and, with your indulgence, I will try to keep it down to four or five minutes.

MR. STEIN: It will appear in the record as if read.

MR. FRENCH: In a Summary outlined at the bottom of Page 1, in a report on Merrimack River Pollution in Massachusetts, dated December 3, 1963, prepared by Camp, Dresser & McKee, it is stated that "the Merrimack River is polluted from the New Hampshire State line to the Atlantic Ocean."

This statement is true today just as it would have been in the years 1850 through 1927, because the industrial river bank enterprises induced by the presence of waterpower and available cheap labor in the areas, and the necessary available capital from nearby Boston and New York, naturally drained their waste liquids and semi-solid waste discharges into the river and the many miles of constructed waterway canals. The growing industrial population at their homes and boarding houses all contributed sewer and domestic wastes into the nearest stream, ditch, or canal.

The Merrimack River Valley, upstream and downstream as well as the Connecticut River, attracted industry because of the availability of water flowage for power, and with which to scour, wash and bleach textile raw materials and finished yarns and goods. It was necessary after using water for such industrial purposes to be able to dispose of the used water by gravity, and all went back into the rivers.

In fact, most permitted water users from the proprietors of the Locks and Canals and the Essex Co., were bound by the articles of agreement to discharge all used water, dirty or not, into the same canal system for re-use at a lower level.

Mills were built in small sections because of the ever present danger of fire; enlarged and extended as the industries grew and prospered. Toilet facilities, crude though they were in the earlier days, were constantly added at places in the mills and millyards, always nearest to the places in the mills where the largest concentrations of labor were located. Thus in a longer mill which, by steps, became up to several hundred feet long, were constructed several toilet towers never less than one hundred feet or more apart.

Thus in any New England and certainly in Merrimack Valley Mills the industrial sewage and wastes were discharged into the nearest canal, penstock, or tail-race, and in many mills in Lowell and throughout the Valley in both the State of Massachusetts and New Hampshire, not at one or two places but sometimes in larger groups of Mills in a large millyard at over thirty and up to fifty locations, many of them deep underground and only visible when canals were "drawn down" for repair purposes.

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There was then no incentive or good reason for piping these industrial wastes and human sewage into common pipe lines, because all such pipeline would invariably be conveyed a few hundred feet away into the same canals or the Merrimack River or Concord River to flow away into the sea. The townships had no sewers large enough in those days to carry these wastes away, AND INDEED at this much later day the same is still true.

The City and Town sewer systems gradually built deep under well paved streets were not constructed large enough to take care of industrial scouring, dyeing, washing and the human sewerage from industrial plants employing from 500 and up to 3,000 employees at the peak points and since the time of industrial activities in the cities along the Merrimack and Concord Rivers.

Thus there is not a single mill on the entire Merrimack, Nashua or Concord Rivers which does not have a multiple pipeline sewage discharge problem into existing canals, penstocks, tail-races or the rivers themselves.

Very few of the existing city and town sewers would even be ONE QUARTER the size necessary, if all of the mill discharge and sewerage could be gathered together into common sumps and pumped into too-small city-sewers nearest to the industrial plants.

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No estimate have been prepared to evaluate the piping costs that every producing and labor employing plant would have to install in order to discharge the hundreds of thousands of gallons which that and other plants would direct into city sewers.

In most instances the cities would be obliged to enlarge the existing sewers and build larger and bigger sewers deep under well paved streets all at great cost to the municipalities and towns. None of these absolutely necessary costs have been included in this report and estimate.

All such mill sewage and industrial waste piping costs would have to be installed at premium overtime labor rates, on Sundays and Holidays, because a greater portion of the work could only be performed when the canal systems are drawn down.

Normally the canals are drawn only once or twice on emergency only from November 15th through March 15th because water in low exposed pipes would freeze and that ice would be drawn into expensive and high speed centrifugal pumps the first operating day following the draw.

Overtime labor in the drawn canals is very unpopular and many mechanics and pipers refuse the work which must be done in hip rubber boots.

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Only the naive or completely uninformed could possibly visualize the multitude of complications which will have to be solved and worked out if existing mill toilets sometimes numbering 200 to 400 and as many more mill sinks all have to be piped together and pumped over the hump "so-to-speak" into a nearby city sewer much too small to receive their flowage.

In plants employing 1,000 to 4,000 employees (combined tenant labor use) these newer and outlined requirements will sound a death knell to all such plants, because the income from industrial rental concerns, of which there are over one hundred over the entire length of the rivers, just barely pays for the higher heating costs, the city, town, county and state taxes, the maintenance of higher priced acres of roofs of which less than 5% are newer than 15 years old, and the constantly expanding requirements of city, town and state labor and safety elevator requirements, to mention but a few.

Many of such industrial tenant renting firms now are on the fringe of becoming no longer able to pay the rapidly advancing overall costs. Many of the leases are for 3 to 5 years duration and no increase in rental is possible for many months.

There has been no mention of how these hard pressed

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industries already being lured into greener pastures and into nearby tax-free single-storied mill locations elsewhere, merely to obtain the augmented yearly payrolls, will ever find money enough to make possible these constantly expanding demands upon such meagerly industrial capitalized systems.

The State and Federal Government nor the Cities and Towns cannot expend public funds to improve existing facilities located in privately owned industrial properties.

In fact the State and Federal Government thus far have not even indicated any intention of contributing more than a 12 to 15% of the cost involved, which is hardly enough to pay for the engineering surveys and blueprints necessary to engage in the work.

In larger plants involving industrial floor areas of 300,000 to 1,000,000 square feet, the possible initial cost of complying with these plans and requirements would run from $100,000 to $500,000 to be entirely borne by a hard-pressed owner or management, in many cases remotely owned under distant plant directorship. How long do you think disinterested remote ownership will continue to pour money into multi-stored buildings with sometimes 10 to 15 outdated and soon-to-be condemned elevators under the new state code, and with roofing replacement problems that in some cases will involve expenditures of a quarter of a million dollars in a single plant over the next ten years.

All such plants have been living off-their-fat, but there comes a time, and soon, when all elevators within the state and all roofs over 15 to 20 years old will have to be rebuilt and replaced.

The mills of the Merrimack and Concord Rivers are on their way out!!! And with them will go the jobs of 18,000 working people in the mills and 15,000 people who serve the surrounding community needs of a greater Lowell Community.

The results of this Pollution Study and Survey, and its attendant costs, together with the time limit on replacement of all elevators older than a few years at a cost of from $20,000 to $30,000 per elevator COULD WELL BE THE STRAWS THAT WILL BREAK THE CAMEL'S BACK.

If the State Boards of Health in the two States are absolutely truthful, they would be obliged to declare that the Merrimack and Concord Rivers at this time are less polluted and actually cleaner by comparison than for many years of the past.

Large groups of polluting industries, wool scourers, tanners and bleacheries have closed their doors and, in many cases, torn down their buildings, and on Page 2 of Chapter 1 of the introduction of the report, it is openly stated that many of the polluting industries present even as late as 1946 have left the area and as a result the organic pollution by industries has DECREASED BY 70%.

Fish are beginning once more to be caught from these rivers from the sea to the New Hampshire line, and from there northward to their sources.

The plans as outlined in the Report by Camp, Dresser & McKee are far from a full solution of the pollution problem if there is such a problem.

> The plans that are contemplated will involve local neighborhood nuisances wherever local treatment plants are located. In Lowell at the Tewksbury Town Line along the southern shore of the Merrimack River at the foot of Burnham Street, there will be large acreage devoted to the treatment of human sewage, and industrial waste products with all the attendant odors and obnoxious aftermath, and right in the middle of a large housing development.

Storm water discharge from all city streets during heavy thunderstorm and river freshets could well cause the entire system as planned, to back up and overflow.

In fact the report itself on Page 2, 3rd Paragraph, says:

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> "During and following rainstorms combined sewers will carry mixed sewage and storm water to the river - EVEN AFTER CONSTRUCTION OF THE NEW WORKS PROPOSED HEREIN, OVERFLOWS OF MIXED SEWAGE AND STORM WATER TO THE RIVER WILL RESULT FROM RAINFALLS."

And the report says:

> "We estimate that about 30% of the annual load of bacteria and suspended solids and 10% of the BOD may discharge to the rivers in the overflows due to just rainfall."

What a mockery this will be. After all the money is spent, STILL RAW SEWAGE FLOWING INTO THE RIVERS after every heavy rainfall.

The ultimate goal hoped to be accomplished by all this tremendous expenditure largely out of local taxpayers under existing maximum allowances by State and Federal funds, is to recommend that the dissolved oxygen content in the river water from the New Hampshire line to the ocean be maintained above 4 ppm (parts per million) and the engineers state that a dissolved oxygen content of 5.2 ppm is likely to prevail in the Merrimack River at its entrance into Massachusetts at the State Line of New Hampshire.

In other words, it means that with all these required improvements in Massachusetts, it will be the maximum goal to be obtained to not have greater than 1.2 ppm increased dissolved oxygen in the river than what is expected to prevail at the New Hampshire State Line after the river has flowed from Nashua to the State Line of Massachusetts.

These tremendous first costs running into nearly $160,000,000, however, will not be the final costs to be paid by the taxpayer.

ALL METERED WATER USERS IN THE WATERSHED OF THE CONCORD AND MERRIMACK RIVERS will be assessed in one manner or another for a service charge for use of this system if installed. These charges would also be assessed even to users of privately owned septic tanks (see The report of the Engineers says on Page 5).

> It is recommended that construction costs for the proposed sewage works be assessed against the general property tax, and that operation costs be paid by those having connections to the sewers, on the basis of their water consumption. Using this method of assessment, we estimate that the cost per year for an average family served by a sewer would range from about $28 in Westford to about $68 in Methuen; and for an average

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family not served by a sewer, from about $12 in Westford to about $46 in Salisbury. The estimate for Lowell is not expressed but will exceed $65.

Take five in a family. That's a pretty big lump, isn't it? I think it would pay for quite a few kiddy-cars, coats and shoes.

THE REAL PREDICTED COST OF THESE IMPROVEMENTS ARE OUTLINED ON A SUMMARY TABLE 48 LOCATED BETWEEN PAGES 214 and 215.

NOW HEAR THIS:

In 1970 after all this work has been approved and completed:

The Average annual cost per person served by a sewer will be in LOWELL $14.90.

The annual cost per person not served by a sewer (a private owner with a septic tank) will be $9.15.

The increase in the Lowell Tax Rate for 1970 will be $10.49 just due to construction cost alone.

The City of Lowell's share cannot be less than 25 million dollars and LOWELL'S share of the ANNUAL COST OF OPERATION will be over $500,000.

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It is a strange twist of fate that the location of Lowell upon the Merrimack River, which caused its industrial growth, is now the factor under the dreams of the birch bark canoe association, recreation or bust societies, and the Isaak Walton's, who never would fish or bathe in the Merrimack River anyway - which will SOUND THE DEATH KNELL OF THE INDUSTRIAL DEVELOPMENT ALONG THE BANKS OF THE MERRIMACK AND CONCORD RIVERS.

The wiser and earlier members of the General Court of Massachusetts recognized and acknowledged that the Merrimack and LOWER CONCORD RIVERS were workhorse rivers.

They knew that to encourage industry to locate and stay within our state, that these rivers must continue to serve industry and the cities along their shores.

Let us hope that the present members of the General Court will continue to regard the needs of industry and the large weekly payrolls, as the paramount needs of the whole people.

Let the members of the General Court deeply appreciate that the entire voting population of the Merrimack Valley rejected a similar and less costly proposal in a REFERENDUM in 1946 by a vote of 3 to 1 against.

Thank you very much.

MR. STEIN: Thank you, sir. Are there any questions?

I do feel constrained, if you don't mind, to mention this. I know the State of Massachusetts contracted with Camp, Dresser & McKee and it did cost $80,000. To check the one paragraph which I question, I think we should flag it for people who read the report, because there were capitalizations in your statement which I did not read in the report, and there was a condensation of that paragraph.

You are perfectly free to do that for the record, but I think at this point we should flag that for Camp, Dresser & McKee.

MR. FRENCH: We want nothing to appear in the report that isn't in Camp, Dresser & McKee's report. That is the bible of this paper.

MR. ROGERS: I have a couple of points here.

MR. STEIN: Yes, sir.

MR. ROGERS: Possibly to clarify the record. The second phase of Camp, Dresser & McKee's recommendation is to take care of these overflow problems.

MR. FRENCH: At a different and higher cost. It is not included in any estimate at present.

MR. ROGERS: It is included in the $140,000,000 estimate.

MR. FRENCH: I'm sorry; I think you are right.

MR. ROGERS: The $90,000,000 estimate covers the first phase, and the additional covers the second phase including the overflow; isn't that right?

MR. FRENCH: But no estimate for the increased cost to industries and municipalities; isn't that correct?

God help us.

MR. STEIN: Thank you.

MR. TAYLOR: Mayor Lawler of the City of Newburyport.

STATEMENT OF GEORGE H. LAWLER, JR.
MAYOR, CITY OF NEWBURYPORT, MASSACHUSETTS

MAYOR LAWLER: I am George H. Lawler, Jr., Mayor of the City of Newburyport.

I am very pleased to be here today to attend this conference with members of the Federal Government. I am perhaps one of many in the room here who are glad to see them here in Massachusetts today.

I have listened to the testimony here since 9:00 o'clock this morning. I have as yet to hear anybody deny the fact that the Merrimack River is not polluted or that something shouldn't be done about it.

In the City of Newburyport, in the year 1963, we broke ground on the 29th of June on the construction of a sewage treatment plant. The cost to the City of Newburyport was a $550,000 bond issue. We originally asked for 888, and the bids came in low. We received $550,000 from the Federal Government, of a total cost of one million one hundred and some odd thousand dollars.

The ten members of the eleven-member City Council voted for this bond issue. We had the backing of many local communities and people in the city who realized the cost and wanted this done.

Local industries cooperated 100 per cent. We even had a local industry in town that it was going to cost some money to do some work to change this around, that donated the land to the City of Newburyport to build one of their pump stations.

I would like to have these facts on the record, because I don't believe the opposition in many of these communities is what it is always claimed to be. I think when the cases are broken down, when the facts are known, the attitudes of a lot of people will change.

Admittedly, the cost of this project on the Merrimack River is a lot of money. But, gentlemen, right now, one fact that everybody is overlooking is the fact that we do not, even at this point, have a program for doing this in the Merrimack Valley.

We are talking of a cost of $94,000,000. Over how long a period of time, over what, nobody can say. The State of New Hampshire has a program. They have made tremendous strides in cleaning theirs up.

I dispute some of the figures that were given here today when the report says that 70 per cent of the industrial waste in the Merrimack River has been taken care of over the years. That's true. They don't tell you how much domestic waste has been added in the record. When they tell you only one percent of the monies allotted to the State were due to the project, they are claiming that $94,000,000 in one year or one program.

That isn't the answer, gentlemen. Under the Federal law, if the money is available, each community is allowed 30 per cent if they want to do it alone. That is the true factual figure. The City of Newburyport, under an Accelerated Public Works program, had 50 per cent money available. We would have had 30. We picked up an extra 20 per cent by being in an A.R.A. area and going after a public works grant.

I think the approach to this thing is for everybody to agree that the Merrimack River is a problem, that it is polluted. A program should be set up and established. Legislation should be enacted for more Federal money, a higher rate of grants. The State should participate. We should face our responsibilities and proceed with them.

I think a program is needed. I think a lot of hysteria and high costs have been thrown around. I am a little bit concerned when I read in this statement that the conference is going to be recessed. I hope it isn't going to be dropped and forgotten. From this, I would like to see some planned action for the cleanup of the Merrimack River this year.

In July of this year, when the Newburyport plant is completed, I would then say that I would not let the responsibilities of the City of Newburyport be neglected by the up-river communities. We have faced our responsibilities with the assistance of the State and the Federal Government. We hope we can help them to face theirs.

Thank you.

MR. STEIN: Thank you very much, Mayor. Are there any comments or questions?

(There was no response.)

MR. STEIN: Mr. Taylor?

MR. TAYLOR: Eugene Crane, Southwell Combing Company.

STATEMENT OF EUGENE F. CRANE, TREASURER AND GENERAL MANAGER, SOUTHWELL COMBING COMPANY, NORTH CHELMSFORD, MASSACHUSETTS

MR. CRANE: The comments I am going to make now I have made several times before. They are typical of the thinking of various industries in the Greater Lowell and Greater Lawrence areas. This same problem has been discussed many times up there.

My name is Eugene F. Crane. I am the Treasurer and General Manager of Southwell Combing Company, North Chelmsford, Massachusetts.

Southwell is a wool and synthetic combing plant which uses many hundred thousands of gallons of water daily in its various operations. We agree, along with everyone here today, that the natural water resources are most important to any community and, as such, they must be preserved.

I am not going to bore you with facts and statistics, but I do want to go on record as follows:

This company employs approximately 700 people, with an annual payroll in excess of $2,500,000. This is new money from outside which is pumped directly into the Greater Lowell business stream each week. This is not circulating money which merely makes the rounds from the merchant who pays the insurance agent, who pays the doctor, who pays the nurse, who pays the grocer, who, in turn, might well pay the merchant with the same dollar he received from the nurse.

We pay an electric bill of about $10,000 a month. We pay local real estate taxes of about $33,000. Wherever we can purchase or subcontract locally, we do so.

As employers, we favor local residents in our hiring policy. I might add here that the textile industry has a somewhat undeserved reputation for not being steady. It is true that on a seasonal basis, we might take on 125 to 200 people each year who would be subject to some turnover; however, what most people don't realize is that we do employ a hard core of 600 people for whom work exists 12 months of the year. Year in and year out, I think our employment compares favorably with the so-called "glamour industries" which, although little is said about them, are either all up or all down.

We have followed an active policy of cooperating with town officials. We participate in charitable and community causes such as the United Fund, etc. We have contributed to all community enterprises such as the Little League, safety programs, Halloween programs for children, police band uniforms, etc.

As an industrial citizen of the town, we feel a civic obligation to raise our voice from time to time on any matter which we think is of mutual interest to ourselves and the community. This is why I am here today.

This matter of stream pollution has many different facets. Do we want the Merrimack River and its banks to be a park for recreation uses only and the like, or do we want to maintain a vital economy which will support many active industries, which may be the life blood of all these cities and towns along the banks?

Everyone should be constructive - no one wants to look back 25 or 50 years. Many of the industries which possibly did pollute the streams are long since out of existence, but I think a good deal of thought should be given to the matter before us before we go head-long into stream pollution controls and projects which could cost many millions of dollars to industry and to the community. Something such as this might well be the straw which could break the back of some of these industries.

Pleasure activities such as boating, swimming and fishing along the rivers and natural waterways are important. Industry is also certainly important. We should give careful, deliberate thought to a proper balance between these things. We should keep well in mind the fact that if you want to maintain a prosperous economy, it is industry in this area which must do it.

This is all I have to say. Thank you for listening to me.

MR. STEIN: Thank you very much.

MR. PALAZZI: Can I ask you one question?

You told us what you did on Halloween for the children, but you haven't told us what you propose to do about pollution.

MR. CRANE: What I wanted to bring out and stress, and you probably missed what my point was, was that we are active in the community and we participate in all community activities.

What was the second part of your question?

MR. PALAZZI: I wanted to know what your company proposed to do about pollution.

MR. CRANE: At this minute, we don't know what we can do, because even though you people have been studying this program and problem since 1928, and we have had two meetings, one with Mr. Worthen Taylor in the Lawrence Experiment Station about six or seven months ago, and several others, the wool scourers and combers in the New England area spent about 75 or $80,000 along in 1938, and additional money in 1942, probably to the tune of 35 or $40,000, doing various things in our own plants to eliminate the effluent that does go into the stream.

I think the various companies involved that I am familiar with have done a considerable amount to try to cut down the effluent going into the stream.

Again, I think somebody earlier said that most of these virus and bacterial infections are not caused by industrial waste. They are caused by domestic waste. There are not anywhere near the amount of industrial wastes going into the river now certainly that had been going in 25 or 30 years ago.

A statement was made at one of the earlier meetings by someone in the Massachusetts Department of Public Health that it isn't a question of the Merrimack being hygienically clean. It should be made aesthetically clean. I believe those were the words that were used.

MR. PALAZZI: Thank you.

MR. STEIN: Any further comments or questions?

MR. CRANE: None that I have.

MR. STEIN: Thank you very much, sir.

While you are calling on the next speaker, Mr. Taylor had also submitted, with the Camp, Dresser & McKee report, the final report of the Nashua River Survey submitted by the National Council for Stream Improvement of the Pulp and Paperboard Industries, Inc., New York, New York, dated January 15, 1964.

Without objection, this will also be made an exhibit, but will not appear in the transcript.

(The exhibit above referred to will be found in the files of the Department.)

MR. STEIN: All right, Mr. Taylor.

MR. TAYLOR: Mr. Andrew J. Gillis, former Mayor of Newburyport.

STATEMENT OF MR. ANDREW J. GILLIS,
FORMER MAYOR OF THE CITY OF NEWBURYPORT,
MASSACHUSETTS

MR. GILLIS: I am Andrew J. Gillis, Newburyport, Massachusetts, six times Mayor.

When I was first Mayor of Newburyport way back in 1928, 36 years ago, I used to fight the State Board of Health, Dr. Bigelow, which probably some of you people recall. I figured then that the State Board of Health was nuts, and I still figure they are a little bit off the beam today. Of course, some of you fellows don't know Dr. Bigelow wound up in a pond, I think, and Gillis is still around.

I have been against this Merrimack River pollution program since it started. I would like to have Worthen Taylor of the State Board of Health and other members hire a boat in Newburyport next summer when the weather clears up.

There was a tax bill in Massachusetts in 1887. My mother, an immigrant woman in 1887, and me since 1926, a period of sixty odd years - I think I've got the right to gas a little bit.

I would like to have the Massachusetts Department of Health take me on a cruise up to Haverhill on the Merrimack River and show me all this pollution, show me all this excretion, all this waste matter, dirty matter. I would like to have a free ride as a taxpayer. I'm a substantial taxpayer in Newburyport and have been for a good many years.

A lot of you people think I'm a comedian. I'm a rugged individualist. I can pay my way. Nobody has to give me anything. I give a damn for nobody. I can be as rough and tough and as nasty as anyone who comes along the line. I fear no man, no woman, nobody, and I say that Massachusetts ought to take us in Newburyport and show us all the pollution and all the waste matter in the river.

I used to fight about the clams. I walked in the clam flats. In fact, I was there and dug for clams, and we made money for years, but of late years, we don't do it any more.

We had the State take us over. It's too bad that the State of Massachusetts and the Capitol in Washington don't give us all a handout so we wouldn't have to work.

I like to hear a man like Mr. French talk. I would like to hear the other men talk. I say all this corruption, all this waste matter and all this refuse in the Merrimack River, I would like to see it as far as Haverhill. I would like to have Mr. Celebrezze of Cleveland tell me the Cuyahoga River and Lake Erie are cleaned up yet. I don't believe they are.

Now, getting back to Newburyport, we built a plant down there. Here is what I always objected to. The Merrimack River starts up here in Franklin. We come all the way down, down into New Hampshire, down into Lowell, Lawrence, Haverhill, Amesbury, Merrimac, Salisbury and Newburyport. And Newburyport has to go for $550,000 of our local taxpayers' money, a bond issue beyond the city limit of debt. We have to go to the State and ask them can we extend our bonded indebtedness. And, of course, the people in the State house, they don't care whose money they spend. Anybody can spend your money, anybody can spend my money, but it takes a good man to keep his own money.

I'm a gasoline dealer for 42 years, and I still find it quite a job to pay my bills, but to date I pay them. I enjoy a pretty good reputation in the business world in my line, the gasoline area, and if you don't think there are any banking connections in Newburyport, ask the bankers about Gillis. The old bankers used to say that Gillis was the best financial man Newburyport ever had.

You couldn't be Mayor six times and not have something. Of course, you have heard the Mayor talk, the captive Mayor. He is still Mayor Zabriskie, and my remarks will be taken back.

You people don't know Newburyport any more than I know Lowell and your other cities. I know the story. I know how they keep bosses out at this time. I was told to keep my mouth shut. I did, and I got beaten, but that's all right. I ain't beat yet.

But why should Newburyport have to go for $550,000 of our taxpayers' money. And you would think down in Washington that Washington was giving you that dough. You would think Washington was. I wonder where that dough comes from. It comes from suckers like you and I here, and Mr. French, the man that's out trying to make a dollar. It ain't coming from these goldbrickers here that are getting paid by the

Federal Government and the State of Massachusetts.

I'm here at my own request. I'm here paying my own freight. These fellows are getting a salary for it. You can't blame them. Everybody likes to be on the payroll. I used to be on the payroll at Newburyport for $1,200 a year.

You heard my story. I could go on and tell you a lot more. The story ain't over in Newburyport yet. This is 1964. I'll give you a report in four or five years, when I make the prediction now and openly -- the papers can carry it -- that the State of Massachusetts will send a commissioner to take Newburyport over, like they did Fall River in the depression days, and don't think I'm kidding. I think a man who has been six times Mayor of an old commercial town can say it. It is really up against it. We have no industry. We are almost broke.

They think it's a grand thing that we can spend all the money like a drunken sailor on a spree. A lot of you people are smiling. A lot of you people are laughing. Just you wait. I'll give them five or six years, and I say, and I am confident in saying so, that Newburyport will have a man from the State house running our industry.

Mr. Taylor knows me for years, and I know him, and I say to Mr. Taylor that in the town of Newbury, the parent town of Newburyport, he ought to suggest to his town residents that they put in a sewer for the town of Newburyport. I'll bet they would be run out of the town of Newbury.

Thank you.

MR. STEIN: Thank you, Mr. Gillis, for a forceful expression of your view.

Mr. Taylor?

MR. TAYLOR: I would like to say for the record that Mr. Gillis has been not only Mayor of the City of Newburyport for these six times, but I look upon Mr. Gillis as a very good friend of mine. I never go through Market Square without speaking to him when it is possible.

Though I don't think we have ever had a cross word between ourselves, I might say that back in 1930 or 1931, when he was Mayor of the City of Newburyport, he brought me back from the City of Chicago to be in charge of the Newburyport treatment plant, and I have always been very much indebted and have felt very kindly towards Mr. Gillis all of this time.

The next speaker will be Raymond Greenwood, who is a Selectmant from the Town of Chelmsford.

Mr. Greenwood.

STATEMENT OF RAYMOND J. GREENWOOD,
SELECTMAN, TOWN OF CHELMSFORD,
MASSACHUSETTS

MR. GREENWOOD: I am Raymond Greenwood, the Chairman of the Board of Selectmen at Chelmsford.

Mr. Chairman and Members of the Commission:

I only have a few words to state, a few statements in regard to some of the statements made here today. I wish to go on record as making a few comments.

Senator William Hayes of our district intended to speak here today, but he had to leave for session in the Senate. He has authorized me to say that whatever statements I make would mirror his thoughts on the matter.

We have heard a lot of technical reports here today. They have been very lengthy. There have been very many studies. The only study that is missing that I can see is a study of the financial capabilities of the communities to comply with such a program.

It also seems to me that the issue of recreation has taken a bigger place in the discussions than the issue of public health.

I believe that we all recognize that there is a condition in the river. I see indications that the communities have all made efforts or are making efforts or studies for contribution.

I know in our town we have applied for a loan -- it has been granted -- from the Federal Government to study the feasability of a sewerage disposal system. Our industries, as mentioned by one of the speakers here, Mr. Crane, and the other industries have come to us and they have been willing to cooperate to the fullest.

I notice that all these communities are all in agreement to study. They are in agreement that there is a condition, but they are all stopped at the brink of destruction because of the financial situation involved.

The only community that seems to have succumbed in this situation is Newburyport, and there is some indication that there is a little difference of opinion down there.

But I would like to stress the fact that these studies always end up in the situation of the economics of the matter, and this is where I believe that we would have to have more help from the Federal Government. We would have to have higher subsidies to be able to carry out these programs.

I represent a town of 19,000 people, which has doubled its population in twenty years. With the school growth and the other necessary growths and departments, now to contemplate the expenditure of funds for a sewage disposal system would be completely out of the question, and I would like to go on record as saying that if this were a program that was subsidized by the Government to a greater extent than it is now, I am sure the communities would be falling in line to correct these conditions, but under the present situation, I believe that it is an awful cost to bear for fishing and recreation.

Thank you.

MR. STEIN: Thank you. Are there any comments or questions?

(There was no response.)

MR. STEIN: If not, Mr. Taylor?

MR. TAYLOR: Mr. Chairman, I have here a statement by Mr. Charles H. W. Foster, the Commissioner of the Massachusetts Department of Natural Resources, but before putting it into the record, I wonder if there are any others from Massachusetts who wish to make a statement?

(There was no response.)

MR. TAYLOR: If not, Mr. Foster would like this put into the record, and I think that it would be well to read it into the record, as well as to give you a copy.

MR. STEIN: Fine.

STATEMENT OF CHARLES H. W. FOSTER, COMMISSIONER, MASSACHUSETTS DEPARTMENT OF NATURAL RESOURCES

I am Charles H. W. Foster, Commissioner, Massachusetts Department of Natural Resources, among whose statutory responsibilities are those relating to outdoor recreation, marine and sport fisheries and water resources.

I am also privileged to serve as an officer of the New England Interstate Water Pollution Control Commission; as a member of the Merrimack River Valley Flood Control Commission, and as an agency representative on the Special Commission established by the Massachusetts General Court to consider present conditions of pollution within the Merrimack River valley.

May I say at the outset that I fully endorse the desire of all parties to achieve a cleaner river and particularly admire and respect the efforts of the Massachusetts Department of Public Health to find equitable solutions to the problems at hand.

My remarks will focus principally on the fields of recreation, fisheries, and water resources, areas of responsibility with which my Department is officially charged.

C. H. W. Foster

In terms of public outdoor recreation, the Department has been interested in the Merrimack River for almost a decade. A comprehensive master plan on Public Outdoor Recreation in Massachusetts prepared by the Department in 1957 listed the Merrimack River as one of seven principal outdoor recreation regions in the state. The report cited a need for one and one-half times the facilities available in 1957 if the predicted requirements of the region were to be adequate by the year 1977.

As the result of this report, a thorough study of the potential of the river for outdoor recreation was instituted in 1961, and it is now the opinion of the Department that the Merrimack River area, given an accelerated pollution abatement program, could become one of the foremost regions for outdoor recreation within the Commonwealth.

The river is now intensively used for boating and fishing purposes and the construction of Interstate 495 will render the area even more available to the two million people who now reside in the eastern portions of Massachusetts.

In accord with this projected demand, the Public Access Board of the Department of Natural Resources has currently authorized for construction additional boat access facilities at the mouth of the Merrimack River in Salisbury.

The Department also visualizes a linear river reservation ranging the entire tidal length of the river designed to protect the significant historic and open space values so characteristic of the Merrimack valley.

It is also hoped, through a series of acquisition and development projects, that a chain of riverside parks accessible both by land and by water can be developed to provide additional opportunities for public recreation along the river.

In the field of sport fisheries, improvements in water quality due to the decline of the textile industries has made the Merrimack River a most popular area for fishermen. In recent years sizable runs of striped bass have been reported as much as ten miles up river, and the tidal nature of the river system makes the potential for sport fisheries among the most promising of any water area within the Commonwealth.

For these reasons, the Department has scheduled the Merrimack River as one of the initial areas for an intensive estuarine survey designed to discover ways in which the fisheries resource can be better managed and utilized for commercial and recreational purposes.

The survey of the Merrimack estuary was initiated during the spring of 1963 and is only partially complete at this time. Preliminary results, however, indicate that there is considerable promise for the restoration of shellfisheries which were of considerable value to the city of Newburyport and neighboring communities during the 1920's and 30's.

The above potential, however, will rest in major part upon an effective pollution abatement program, not just in the Newburyport area, but for the river as a whole.

With respect to water resources generally, the Water Resources Commission, which I am privileged to head as Chairman, considers the Merrimack River one of the last major surface water sources in Massachusetts with still untapped potential. It is currently used for a variety of industrial purposes and to a considerable degree for agricultural and recreational activities. In addition, the cities of Lawrence and Lowell have turned to the river for additional sources of supply, and unless an extension of metropolitan water is brought into the valley, additional communities will be forced to seek river water to augment their present sources.

The Massachusetts General Court, in recognition of the serious water problems in this valley, has authorized several comprehensive studies which have not yet been accomplished due to lack of funds, but there is every evidence of a growing concern by communities within Essex County as to their future needs in the water resource field.

In short, it should be obvious by this and previous testimony that the Commonwealth is well aware of its problems in this region and is actively seeking satisfactory solutions. As evidence I would cite the newly formed Central Merrimack Regional Planning District; the water resource studies authorized by the Massachusetts legislature, the encouraging progress in flood control undertaken through the programs of the Merrimack River Valley Flood Control Commission and the Corps of Engineers; the pollution abatement works now being accomplished by several communities within the valley; and the comprehensive report recently prepared by the Massachusetts Department of Public Health concerning conditions in the river.

May I also cite a recent citizens conference on pollution in the Nashua River, spearheaded by the conservation commissions in this sub-basin, with the resultant decision to form a regional association of interested citizens and agencies to help develop a comprehensive water pollution control program in this portion of the Merrimack valley.

As a major beneficiary of any abatement program, my position is somewhat simple. The Department of Natural Resources would clearly like the maximum amount of pollution control in the shortest possible space of time. We recognize, however, the sizable problems that lie ahead and the fact that the entire economy of the valley could well be affected by the financial investment required for a job of this magnitude.

Our position is, therefore, one of reasonableness with emphasis on assistance rather than compulsion, and I trust this attitude will be shared by the Federal agency involved in these proceedings.

I would recommend a concerted, cooperative effort at all levels of government with a determined attempt shared by all parties to seek successful ways of financing an effective abatement program.

Lastly, I would recommend that the Department of Health, Education, and Welfare make it a prime condition of this conference not to utilize additional steps available to it by law until all existing avenues of the states concerned, and their interstate compact, have been exhausted.

MR. STEIN: Thank you Mr. Taylor.

Are there any comments or questions on that statement?

(There was no response.)

MR. STEIN: Massachusetts rests.

Is there anything that anyone wants to add to the discussion?

MR. ROGERS: Is Mr. Markham still here? Did you want to make a statement? Mr. Markham was called earlier.

He is with the Area Redevelopment Administration, United States Department of Commerce.

STATEMENT OF THOMAS F. MARKHAM, FIELD COORDINATOR, U. S. DEPARTMENT OF COMMERCE, AREA REDEVELOPMENT ADMINISTRATION

MR. MARKHAM: I, like yourself, Mr. Chairman, have been sitting this out all day. I know you want to bring this conference to a close.

I merely want to state, in behalf of William L. Batt, Jr., that Mr. Batt wants to be recorded in favor of effective pollution control in the Merrimack and Nashua Rivers. Modern society, through its increasing use of water oriented activities, expects that streams be protected so that they can perform functions that add to the well being of the area's population.

Effective pollution control begins with the handling of wastes at the source or enroute to the stream. Effective pollution control is badly needed along these two rivers if the communities along these rivers are ever going to pull out of the economic decline that they are now in.

The City of Lowell, which is one of the principal cities along the Merrimack River, has been a labor surplus area for a long time. Just yesterday, the U. S. Department of Labor named Lowell as one of four labor areas in the country that went over 9% of the national average of unemployment during the month of January.

Lawrence and Haverhill both are classed as labor surplus areas. These two cities also with Lowell rank with the highest welfare rates in the State.

Out-migration for a disproportionately large number of prime working-age people, along with the lack of opportunity for youth seeking work is a subject of great concern along the Merrimack Valley.

In his State of the Union message, President Johnson called for unconditional war on poverty. There is much to be done here.

The City of Newburyport has led the way for the rest of the communities along the Merrimack Valley. It has its sewerage treatment plant 65% completed. This was made possible through the Accelerated Public Works Program of the U. S. Department of Commerce (A.R.A.). This was made possible by the city providing 50% of the cost and the Federal Government (A.R.A.) providing 50%.

We in A.R.A. are a "bank of last resort," but as such we can help. If our legislation is passed this year -- and we are confident that it will be -- we may again be able to provide grants where necessary for public facilities such as sewerage treatment plants.

Thank you.

MR. STEIN: I might point out that Mr. Batt has been interested in water pollution control projects. In meeting with his top staff representatives, or two of them, a week or two ago, they asked us for a list of cities which were covered by these conferences, so they could give that consideration in the processing of applications for aid under the program.

We work very closely with them and have worked very closely with them on the accelerated works program and other aspects of the program.

MR. MARKHAM: I might add, Mr. Chairman, after listening to our Number 2 salesmen, both Representative Zabriskie and Mayor Lawler of Newburyport, Newburyport being the first city along the valley that took advantage of the Accelerated Works Program and applied for aid in grant monies, and, as the Mayor said, the project will be finished this coming July.

Thank you, sir.

MR. STEIN: Thank you very much, sir.

Are there any comments or points of discussion before we attempt to summarize?

Do you have any, Mr. Rogers?

MR. ROGERS: Yes. I want to make these proposals:

That classification of the Merrimack River Basin be done in 1965;

That plans for financing be arranged for May 1, 1966;

That plans and specifications be submitted for all of the communities by May 1, 1966;

That start of construction be made on all these waste treatment facilities on May 1, 1967.

MR. KNOX: Are you talking about the entire Merrimack River?

MR. ROGERS: Merrimack-Nashua River Basin.

MR. HEALY: You wish a discussion on that matter now?

MR. STEIN: Yes.

MR. HEALY: We have offered our plan as to when this river could be classified.

We are cooperating with the Department of Health, Education, and Welfare, as you well know, for classification of the Androscoggin River and its tributaries in 1965 and

1967.

It is impossible, for the reasons stated in Mr. Palazzi's statement, for us to contemplate any such program as you have just outlined for the Merrimack River.

MR. LA CAVA: Could I add a question?

MR. STEIN: Would you speak up, please?

MR. LA CAVA: Mr. Rogers, how do you imagine that any court of the Federal Government could enforce such a thing, knowing what the situation is up in New Hampshire, knowing of the program that is going on, knowing of the finances that are involved, knowing of the aids that are available, and so forth? How do you imagine you can enforce such a program as you have just proposed? Let's be realistic.

MR. ROGERS: First of all, classification, I think, was proposed by Mr. Knox on the Nashua River, as scheduled for classification in 1965.

MR. KNOX: That was the Nashua River only.

MR. LA CAVA: Nothing to do with the Merrimack.

MR. KNOX: Nothing to do with the Merrimack.

MR. ROGERS: On the Merrimack, though, you stated there was informal agreement as to C classification at the State line, so definitely you have the studies.

MR. KNOX: We have been working on all these rivers for quite a number of years.

As I recall, I stated that Massachusetts proposed to classify the Merrimack River in 1965. Is that correct?

MR. TAYLOR: 1964.

MR. KNOX: 1964, rather, and New Hampshire proposed to classify in 1971.

MR. STEIN: Yes. Mr. Palazzi?

MR. PALAZZI: Mr. Chairman, don't misunderstand New Hampshire's part here. We are not against this. It is just a physical impossibility for us to do this. I mean, with the commitments we have on the Connecticut and the Androscoggin, we just can't make it down there.

MR. STEIN: I recognize your position.

MR. PALAZZI: I want everybody to understand. It isn't that we are against it. We are not against it. We would still like to push that button and have it done tomorrow morning, but we can't do this. We just haven't got the funds.

MR. LA CAVA: Our assumption is that Mr. Rogers has some plan in excess of what we have already outlined to implement this program that he has scheduled, or is there nothing behind it?

MR. STEIN: I thought I said at the beginning we are operating just on the record here. If there is nothing beyond this, we don't have the basis for it.

MR. HEALY: We are operating within the framework of grant funds now available to us.

MR. STEIN: And what was submitted to the conference.

MR. HEALY: Well, we submitted very clearly in our statement that if there were to be any acceleration over and above what was outlined in the Chairman's statement, that there would have to be additional Federal funds to make that possible. That is our position.

MR. STEIN: Right.

Mr. Taylor, do you have any comment on this general discussion before I attempt to summarize?

MR. TAYLOR: Well, specifically, on the matters that Mr. Rogers has spoken of, I am not sure I understood about the classification, because Massachusetts is willing to go ahead with the Merrimack in 1964, and New Hampshire in 1971. As to the Nashua River, Massachusetts is willing to go ahead in 1965. I am not sure whether or not there has been any statement by New Hampshire as to that.

MR. HEALY: Merrimack?

MR. TAYLOR: No, Nashua.

MR. HEALY: Yes, 1965.

MR. TAYLOR: 1965.

MR. HEALY: 1965, yes.

MR. TAYLOR: I think, in the interests of proceeding along quite regularly on this, that we could put this down as an agreement as far as Massachusetts is concerned.

I do say that we want 1964 on the Merrimack, but we are not interested in whether or not New Hampshire does it or not, because we are satisfied with what New Hampshire is doing. We realize that they are having a good program and are carrying it out. However, we must start on our program immediately if we are to have a good abatement program in Massachusetts, so we want to classify the Merrimack River in 1964 and the Nashua in 1965.

MR. ROGERS: Classification by 1965, rather than in 1965?

MR. TAYLOR: No, in 1965. We cannot have a classification ahead of schedule because, for one reason, the New Hampshire legislature has to do the classifying.

MR. STEIN: By the way, I don't think, as close as we are coming to agreement, that we can set this forward on what the three groups have said. In this situation, the only thing I can do is bring back the summary and conclusion of the conference and have a conference with the Secretary, and he is going to make his recommendations.

The way I look at the situation, it can be summarized as follows:

I think, as far as the Department of Health, Education, and Welfare is concerned, the pollution of the Merrimack-Nashua, or the Merrimack system, is occurring both inter and intrastate, coming from municipal sources, industrial sources, and storm water overflows, which creates a health hazard to those who come in contact with the water for water sports. It deteriorates sources of water supply intakes. It interferes with industrial use; creates sludge deposits; interferes with fish and aquatic life; prevents the passage of anadromous fish; interferes with recreation; interferes with the shellfish area, and has resulted in closing the shellfish area; creates odor nuisances and sight nuisances; and interferes with the esthetic enjoyment of the river.

I think the people from Massachusetts and New Hampshire would agree that the river may be substantially polluted or materially polluted within the borders of their States, but New Hampshire would contend that the pollution from New Hampshire does not endanger the health or welfare of people in Massachusetts. The people in Massachusetts would agree with that contention, and the people in Massachusetts would say that pollution flowing in the river in Massachusetts does not endanger the health or welfare of people in New Hampshire.

Those are the different points of view between the Federal point of view and the States' points of view on that. Both of them agree that there is pollution of the river. The Federal Government contends that this pollution has interstate effects, both States saying it does not.

As far as the adequacy of remedial measures is concerned, I think all parties --

MR. KNOX: May I interrupt just a minute, while you are on that point?

Do I infer from that statement that you say interstate pollution is affecting the shellfish life in Newburyport?

MR. STEIN: No. I was not making that contention, as far as I have heard from the reports here. I don't think the shellfish situation applies to New Hampshire, but in Massachusetts you are dealing with intrastate pollution as well as interstate pollution.

MR. KNOX: I just wanted to clear that up.

MR. STEIN: That is certainly correct, Mr. Knox. As a matter of fact, I am glad you brought that up.

As far as the adequacy of remedial measures is concerned, I think it is pretty clear that both States, the interstate agency and Federal representatives, don't think that the measures to clear it up are adequate. That is evidenced by both State programs, and by Mr. Knox' statement. There are just not adequate remedial facilities in there now.

The nature of delays is one of the easy ones to put our finger on, because the theme was a dominant motif all day. That is the lack of finances and the burden this would put on cities or industries in the area.

Beyond that, there is a philosophical objection here where some people might think a better use might be made of the river to carry away their wastes and be the way it is, than putting in remedial measures to clean it up.

These views are not shared, as I understand it, by any of the conferees. This is a conference between the Federal Government and the conferees. The conferees are all agreed on the fact that there should be a program to improve the quality of these waters.

I think we have substantial agreement on that. The only difference, as I see it, is as follows: The question of when it is decided that this should happen, or the timing of it.

As far as New Hampshire is concerned, they will recommend classification for the main stem of the Merrimack in 1971. Is that correct?

MR. HEALY: Yes.

MR. STEIN: You will classify the Nashua in 1965?

MR. HEALY: Yes.

MR. STEIN: And after 1971, New Hampshire is proposing about a 12-year program of abatement, to go to 1983.

In a long-range program like that, I think it is fair to say you are proposing that as a relatively long program without attempting to give specific dates, unless you want to make it more specific?

MR. HEALY: You mean as between communities?

MR. STEIN: Yes.

MR. HEALY: I don't think that it is practical, and it would be merely extreme guesswork.

MR. STEIN: I am not saying as between communities, when one should be done or completed. I think the impact of a long-range program is that --

MR. PALAZZI: Mr. Chairman, we want you to understand that we are going to be improving the river in the meantime all the time.

MR. STEIN: This is understood, that this program will be a gradual one of improvement up to 1982, when you will achieve your program of what you are doing, or what you are proposing, or what Mr. Rogers proposes you have under construction by May 1st of 1967. All right.

MR. HEALY: Mr. Chairman, if I may just interrupt again?

MR. STEIN: Yes.

MR. HEALY: We did offer that all of the tributaries would be classified by 1969, those that are not now classified.

MR. STEIN: All of the tributaries?

MR. HEALY: Yes.

MR. LA CAVA: Isn't it also true, Bill, that if additional aid funds become available, that that date will be pulled ahead?

MR. STEIN: We understand that. Off the record.

(Discussion off the record.)

MR. HEALY: I think it is good that from meetings such as this, people will gain impressions as to what State attitudes are, and our attitudes are completely founded on the facilities and funds that we have to work with.

MR. STEIN: I think your attitude is perfectly plain here, and I don't think any of the people, particularly the people who stuck with us this long, are at all deluded about the attitude, or misled. The point is that you feel your program has to be geared to a Federal program.

I will say this for New Hampshire: You come across and match that with a State grant. In other words, only about six States do that. I think the facts will speak for themselves.

MR. HEALY: But we are interested too that it appear in this record, so that others reading this record not here, will be well advised of what our attitudes are: That we are not trying to hamper the program and that we are moving just as rapidly as personnel and funds will permit.

MR. STEIN: Within your capacity and within your concept of the program.

MR. HEALY: Within our ability to do the work.

It is not just concept; it is within the abilities and resources that we have.

MR. STEIN: I think we can come to the Massachusetts situation.

Massachusetts contends that there are currently unknown factors which make it impossible to arrive at a complete and probable schedule of compliance to a pollution abatement program at this time, and recommends that the conference be recessed.

During the recess period, the Massachusetts Department of Public Health will prepare and present a pollution abatement program and a schedule of compliance.

It will also cooperate with the appropriate local, State and Federal agencies to provide the necessary financial and technical data essential to the abatement program, and it will expedite the program, even ahead of the total program, in every instance where sufficient data are available to assure an adequate and workable program.

This alternative will be presented to the Secretary.

The third one is --

MR. KNOX: Can we go back on that last one just a minute? Will you please read that last sentence again?

MR. STEIN: Yes. That the Massachusetts Department of Public Health will expedite the program, even ahead of the total program, in every instance where sufficient data are available to assure an adequate and workable program.

This is what Mr. Taylor said, and I am just trying to summarize. As a matter of fact, I think that is a good thought.

Is there any question?

MR. KNOX: What about the recess that we were discussing?

MR. STEIN: As to the recess, I think we have here agreement on the first three points, or at least near agreement. We have settled what we think the pollution is. The only difference is one thinks it is interstate, and the other does not think so.

We have settled about the adequacy of measures

I think we can agree on that, and also on the nature of the delay.

The third thing we are talking about is the program for action. We have New Hampshire's program, which we have outlined in the summary. I think that it is a very clear one, with classification of the Nashua by 1965, all the tributaries by 1969, of the main stem by 1971, and a 12-year program for complete compliance, with them working all the time toward upgrading the condition of the river, with the notion that they can't take any faster program because of their commitments in the other parts of the State and the financial capabilities of the industries and the cities within New Hampshire.

The Massachusetts position is also a clear position, at least to me, that they feel that there are unknown factors, and they would like a recess in order to come up with a compliance schedule.

I think in view of the fact that no matter how long we stay here, I don't think we can get complete agreement among the conferees, my recommendation is that this alternative be taken back to the Secretary and presented to him as Massachusetts' position, as we are presenting New Hampshire's position to him.

MR. TAYLOR: Might I say just a word?

MR. STEIN: Surely.

MR. TAYLOR: As far as I am concerned, I would just as soon end this conference at ten minutes to six. I am sure that the Commonwealth of Massachusetts cannot come up with a definitive program stating that this is going to be done by 1967, and something else by 1968, at this time. However, if the conference is willing to accept the fact that we will submit this kind of a thing to the Public Health Service, and then you people can reopen the conference, or if you want to start a new one, I would just as soon recess this one now.

I am not going to be able to give you a definitive program, by year and month, or anything like that, on the Merrimack River main stem or the Nashua River.

MR. STEIN: I understand that.

Our purpose here is to provide a summary to this. What the Secretary wants to do from here on is his concern.

I think we have your position clearly stated here. The position of Mr. Rogers, as the Federal conferee, is that the Merrimack and Nashua Rivers, tributaries and main stems, should be classified by 1966. By May 1, 1966, the towns and cities should have arranged and voted and authorized their financing, with plans and specifications being approved by the appropriate State agency, and by

May 1, 1967, construction should begin, which will finish in a reasonable way.

I should point out that, generally speaking, in these schedules, once the financing is arranged and construction begins, the project generally goes through on time, because you are paying interest on the money. The main thing is to start. I do think that given the projects here, they probably will take different times to complete, to be reasonable.

This, I think, summarizes the attitudes of all of the groups.

Mr. Knox?

MR. KNOX: I would like to say a word, if I may. I would like to get squared away on it.

MR. STEIN: Yes.

MR. KNOX: Has Mr. Taylor withdrawn from the recommendations that you are going to make, or the statement that you are going to give to the Secretary of Health, Education, and Welfare, the part about recessing this conference and having it resume again at a later date?

I think Mr. Taylor has withdrawn that and he is now suggesting that this conference end, shall we say; but that in the very near future he will be able to submit a comprehensive program for Massachusetts.

MR. STEIN: Mr. Taylor, is that your view?

MR. TAYLOR: I would rather do the other, but I think this is what is more likely to happen.

MR. KNOX: I would like to get an expression of opinion from the conferees on that.

MR. STEIN: I would like to hear what Mr. Taylor would want to do. I am not much for recessing the conference.

MR. KNOX: I don't want to either.

MR. TAYLOR: Let's close it right now, then.

MR. STEIN: How about New Hampshire?

MR. HEALY: There is nothing new that we can submit with regard to our program at a recessed meeting. I think we have made our statement now.

I think that Massachusetts obviously will have to have an opportunity to submit this additional information at an appropriate time, and close the conference as of now.

MR. STEIN: Let me make one point. After all, I am just the conference chairman. I don't open the conference and I don't close it. That is up to the Secretary. However, we are not going to make a recommendation that the conference be recessed.

MR. HEALY: All right.

MR. KNOX: Yes.

MR. STEIN: Are you in agreement with that?

MR. TAYLOR: Yes.

MR. ROGERS: Yes.

MR. STEIN: All right. I can't exceed the scope of my authority. Are we all set?

MR. KNOX: No, Mr Chairman. I have one more point.

MR. STEIN: Yes.

MR. KNOX: I wonder if the conferees here want to express an opinion as to what they think of the need for enforcement action at this time. Have we settled this at this conference, that at this time there is no need for enforcement action?

MR. STEIN: As far as I can see, I think the views of the interstate agency and both State agencies, or at least the New Hampshire agency, are fairly clear, that you don't see the need for enforcement action.

I think obviously the Secretary of Health, Education, and Welfare saw the need for enforcement action.

I do not want to be deprecatory, but I think the record is quite clear. I don't know that the interstate agency or New Hampshire ever saw the need for Federal enforcement action, both when the legislation was considered through the years, or in every case we have considered. It is a respectable position, and we know what it is.

Closing Statement - Mr. Stein

Our Department's position is that this program is a good and effective program, and I think that has been the position through both the Eisenhower and the Democratic Administrations.

As far as Massachusetts is concerned, they are going to have to speak for themselves. Up to this time I thought I knew what Massachusetts' position was. The Governor did ask for the enforcement action, so probably they may think it is worthwhile. I can't speak for them.

MR. HEALY: He has reversed that position too.

MR. STEIN: Not for intrastate.

MR. HEALY: Not for intrastate, but he did for interstate.

MR. TAYLOR: If I might put this forward, from discussions with the Governor, I am sure that he feels that at the present time we do not need Federal enforcement on these programs. I do believe that he feels that these programs have to go forward, and if we do not have some Federal assistance or some State assistance, or something like that, the Massachusetts law will not permit enforcement, and it may be necessary at that time to call the Federal Government in to assist the Commonwealth of Massachusetts in enforcement.

However, at the present time, with the avenues that are possibly open, we should not ask the Federal Government to come in and start a Federal program of enforcement.

MR. STEIN: The point is, and the fact is, that the Federal Government was asked, and we are here at the Governor's invitation.

I might also point out, again respecting your point of view, this point of view from State administrative representatives has been presented to the Congress again and again. It has been presented to them practically at every session since 1948, and every time that the legislation has come up the Congress has extended and strengthened the Federal enforcement provision, so this is a position that is well known.

Your views on enforcement will appear in the summary, as you have every right for them to appear.

MR. KNOX: You recognize that we do have these programs?

MR. STEIN: By the way, we will put in that we recognize that you do have active programs, are cognizant of the situation, and are trying to take care of the situation.

Let me emphasize this again. The States are not saying that you want a polluted river, as perhaps some of the people may have said here. We are all agreed that something should be done. I think we are all agreed pretty much what should be done. The only difference is when it is going to be done, and how long it is going to take. That is the sole difference.

MR. TAYLOR: I wouldn't want anything to appear in the summary of this conference to indicate that Massachusetts communities should not be proceeding immediately. There are some of our communities that are perfectly able to finance a complete program of pollution abatement at this time, and I don't want anything to appear that would indicate or give the idea that they might stall for the next few years until the other communities catch up on ability to pay, or something like that.

There are several of these communities on the Merrimack River that this is not going to be a financial burden to, so that I think in every instance they should go forward with the program, as long as we may be assured that it is a reasonable program. This is a matter that you people -- when I say "you people," your technical people -- should be in and discussing with us, and we have invited them in.

MR. STEIN: Right. The remedial facilities should be sufficient to protect the waters for the maximum number of uses in the river.

I think you mentioned in your statement that at least in the main stem, the Class C water was thought of, and I notice some of the tributaries were classified as Class B.

MR. KNOX: B.

MR. STEIN: Given the nature of pollution control and the nature of the art, I think this should be clear. We are all pretty much agreed as to the results that can be achieved.

Again, I think the only problem we have here in the difference of the summary is the question of timing and how rapidly this can be done.

Unless I am mistaken, I don't think there is any difference in an objective on what has to be done in order to get the water pollution under control reasonably.

MR. KNOX: With regard to Mr. Taylor's comments, it has already been established that he was going to classify in 1964, and then he is in a position to issue orders against those municipalities which he feels he can proceed immediately on.

MR. STEIN: If he beats all proposals here, more power to him.

MR. TAYLOR: I don't want to be sticking out like a sore thumb and insisting upon communities doing something if the Federal Government says you don't need to do it.

This is why I feel that this conference or the Federal Government, through its Department of Health, Education, and Welfare, should say that the program that is outlined is essential -- not necessarily to say that it has to be done when and how, but at least to come out and say it is essential to be done immediately, or as soon as possible.

MR. STEIN: Here is what we are faced with, Mr. Taylor. We are not faced with a proposal from you where something is going to be done. We are faced with a proposal from you, if you don't want a recess, for you to make a determination. You can't make a determination on a complete reasonable, probable schedule of compliance at this time, and you want a little more time to present a pollution abatement program.

In other words, you are not saying you are going to beat the Federal schedule. You are saying you are going to give us a schedule later.

I hope that schedule will be as good or better than the proposed schedule. I am sure you will get complete agreement from Mr. Rogers if you beat his schedule. He will probably adjust his to meet yours.

MR. TAYLOR: Off the record just a moment.

(Discussion off the record.)

MR. PALAZZI: Mr. Chairman, because of the lateness of the hour, can we summarize this thing by saying most problems we know can be solved by proper communication, and rather than recess, at some later date if we sat down informally again --

MR. HEALY: Informally?

MR. PALAZZI: Informally -- I don't think we need to have a formal conference. If we informally sat down we probably could help each other solve our problems.

MR. STEIN: This will appear as your view here. This will appear as a summary.

Whether the Secretary will want to reconvene the conference again is something that is up to him

Let me make this clear: As far as this conference is concerned, and this goes for the Federal recommendation -- this is not just a summary -- we are not recommending that he reconvene the conference.

MR. KNOX: I will agree with that. When Mr. Taylor gets his schedule, at the proper time, let him submit it to the Department of Health, Education, and Welfare.

MR. STEIN: Have we gone about as far as we can on this, gentlemen? Is there anything more now?

MR. KNOX: I don't think we all agreed that we were talking about interstate rivers, did we? Isn't that No. 1 on the bulletin?

MR. STEIN: Interstate and navigable rivers. At least, under our definition of navigable rivers, it is both navigable and interstate. As a matter of fact, Senator Wall wants to run a commuter boat up and down.

Does anyone in the audience feel he wants to add something here?

(No response.)

MR. STEIN: If not, I want to thank you all for coming.

It is only through sessions like this and participants and people like you that we can achieve results.

In a complicated problem like this, we have a very serviceable record, and a record on where to move. This problem in the Merrimack River Basin will move forward because of the conference.

We have pretty substantial areas of agreement among all parties concerned, and I do think that given the interstate commission, the State and Federal laws, and, as Mr. Palazzi pointed out, communication and consultation, the areas of apparent difference, no doubt, will be adjusted, as they always are under our system.

We have lived with these people a long time, and they have lived with us a long time -- perhaps it seems too long to them -- but I think we are both going to have to recognize the abrasive quality of each other in getting along in the State, Federal and interstate system of ours, and move forward.

MR. HEALY: At the risk of prolonging the discussion, when you first began, Mr. Chairman, in citing what I think was a list of the various effects, was it to be understood that the conferees were in entire agreement on that, on the effects?

MR. STEIN: No. The way I said it, this was the Federal Government's position, but that the States both agreed that there was substantial pollution within their borders, but not affecting health or welfare of persons in another State. We won't associate you with that list of effects, but it is substantial.

MR. HEALY: Very good You have answered my question.

MR. TAYLOR: I would like to say that Mr. Stein did a very excellent job of summarizing the Connecticut one If he does as good a job on the Merrimack as he did on the Connecticut, we will all be very happy.

MR. STEIN: All right Thank you for coming.

(Whereupon, at 6:05 p.m., the conference was adjourned.)

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